



**CENTRAL  
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## 1CE055P2 - SoNorA



### A.5.6 – ICT development: – User manual

#### O.5.6.4 evaluation tool for nodes and

#### O.5.6.5 evaluation tool for network

Work Package	WP 5 – Activating services along itineraries				
Action	A5.6 – ICT development nodes				
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# 1 Table of definitions

Default	The default is the intermodal network of existing transport network segments and existing terminals, without any changes.
Destination point	Destination of cargo.
Fixed relation	Relations where intermodal service offers already exist and which will be run by a transport operator.
GIS	Geographical Information Systems are both, hard- and software systems for saving, filtering, analysing and also managing data which allow a spatial relatedness. Within GIS geographical data are combined with informational data.
Intermodal transport	Intermodal freight transport involves the transportation of freight in an intermodal container using multiple modes of transportation without any handling of the freight itself when changing modes (but only handling the container).
Logistics chain	The logistics chain describes the transport route which the container (with cargo) takes from start point S to destination point D. The logistics chain consists of segments with terminals ( $T_1$ to $T_n$ ). Example: $S \rightarrow T_1 \rightarrow T_2 \rightarrow D$ .
Logistics service provider	Collective term for providers of logistics services.
Mode of transport	Within the described IT-tool the following modes of transport are available: street, railway, inland waterway, short sea shipping and ferry.
Node / terminal	Element of the logistics chains marking start and end of a segment, in general transshipment of cargo takes place at a node.
Optimisation mode	Within the described IT-tool the following optimisation modes are available: duration, cost, energy consumption (eco) and distance.
Routing	Routing is the process of selecting paths in a network along which to send network traffic. Routing is performed for many kinds of networks, including the telephone network, electronic data networks and transportation networks.
Scenario	A test situation with changed parameters and data of the terminals and networks created by a scenario administrator, to compare with the default. With scenarios changes within the intermodal transport network (including terminals) can be simulated, e. g. construction of a new terminal, closing of network segments, etc.
Start point	Starting point of cargo, e. g. location of consigner.
Via point	Terminal between start point and destination point which will be served. Via points for the start – destination relation can be selected in order to prefer specific transport corridors or terminals.

## 2 Introduction of the tool

Based on the existing interim IT-tool (Interim was an INTERREG CADSES project, 2006 – 2008) a web-based tool for intermodal route planning, infrastructure information and for evaluating changes of intermodal freight nodes and networks was developed. Although the geographical focus of the project is on the south north axis between the Adriatic and Baltic Seas the IT-tool covers the area of almost whole of Europe. Countries which are not yet considered are Iceland, Russia, Belarus, Ukraine, Turkey and the Caucasian region. The IT-tool includes street-, rail-, inland waterway-, short sea shipping-, and ferry-networks. The user manual at hand is valid for output 5.6.4 evaluation tool for nodes as well as for output 5.6.5 evaluation tool for network as this is much more practicable for users of the IT-tool than two separate user manuals. The following functions are available:

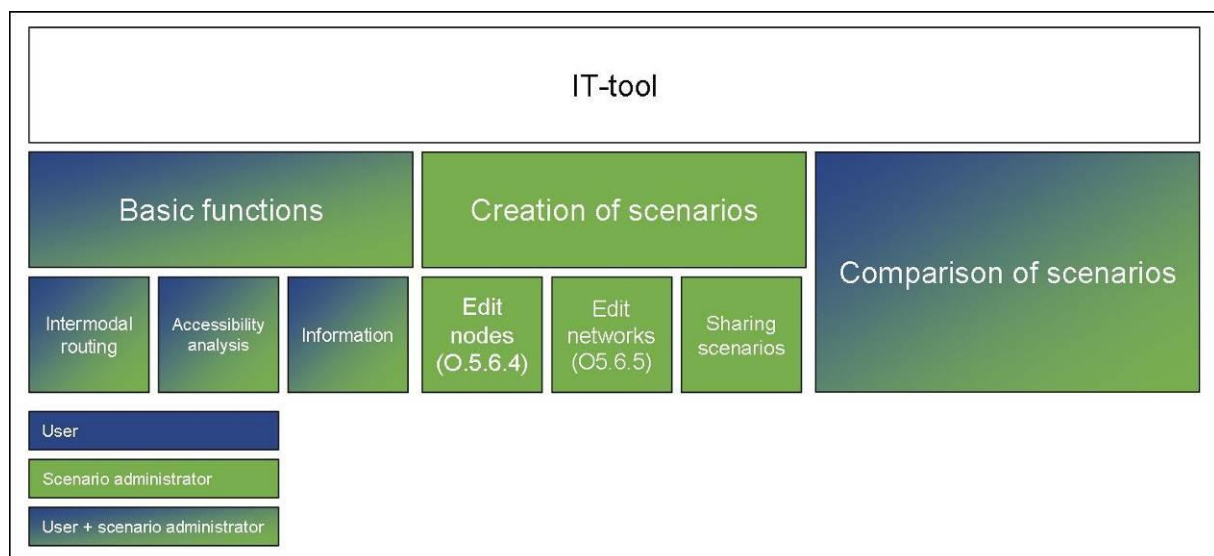
### 2.1 Basic functions

- **Intermodal routing:** The user can choose between the routing between intermodal terminals or free addresses with up to two stopover terminals. It is possible to calculate various routings of alternative intermodal logistics chains in terms of minimised time, distance, costs and energy consumption. The IT-tool offers the possibility to include fixed relations in the routing process (already existing intermodal transport service offers operated by a transport operator). Result of the routing is a map and a list showing the used sections per transport mode and values of the routing are given (duration, distance, energy consumption, costs)
- **Accessibility analysis:** The tool has the function to analyse the accessibility of intermodal terminals regarding the different optimisation modes (duration, distance, energy consumption, costs). The question that will be answered is: how far can one transport unit be transported in each direction with the given value using all possibilities of intermodal transport? The user can disable single transport modes. Result is a map showing the reachable area within 33 %, 67 % and 100 % of the given value and indicating the reachable intermodal terminals. The last are also given in a list.
- **Information:** The tool provides terminal information, e. g. number of gantry cranes or reach-stackers, opening hours, special goods, container storage, etc.

## 2.2 New functions implemented in the SoNorA project

- **Creation of scenarios:** by changing the networks and parameters of intermodal terminals of the default the user can create scenarios.
  - **O.5.6.4 Edit nodes (intermodal terminals):** Add and delete intermodal terminals, edit parameters of intermodal terminals (e. g. the supported modes).
  - **O.5.6.5 Edit networks:** Add, delete and disable network segments, edit parameters of network segments (e. g. lengths, velocity).
  - **Sharing scenarios with other users:** You can upload files concerning the scenario (e. g. description, idea) and publish the scenario to other users.
  - **Comparison of scenarios:** Scenario is the default with changes in networks and / or parameters of the nodes (intermodal terminals). Users can evaluate the changes by automatically comparing them with the default. Previously defined routes and accessibility analyses will be calculated on the scenario and the default. Results are shown as map and list.

The users of the IT-tool can be separated in two main groups: users and scenario administrators. Users have the possibility to use the basic functions “intermodal routing” and “accessibility analysis” as well as comparing scenarios if they are invited to a scenario by a scenario administrator. Scenario administrators are able to create scenarios and edit nodes and networks as well publish the scenario to other users, additionally to the rights of the users. The following figure shows the functions of the IT-tool and groups who can use them.



### 3 Access to the tool

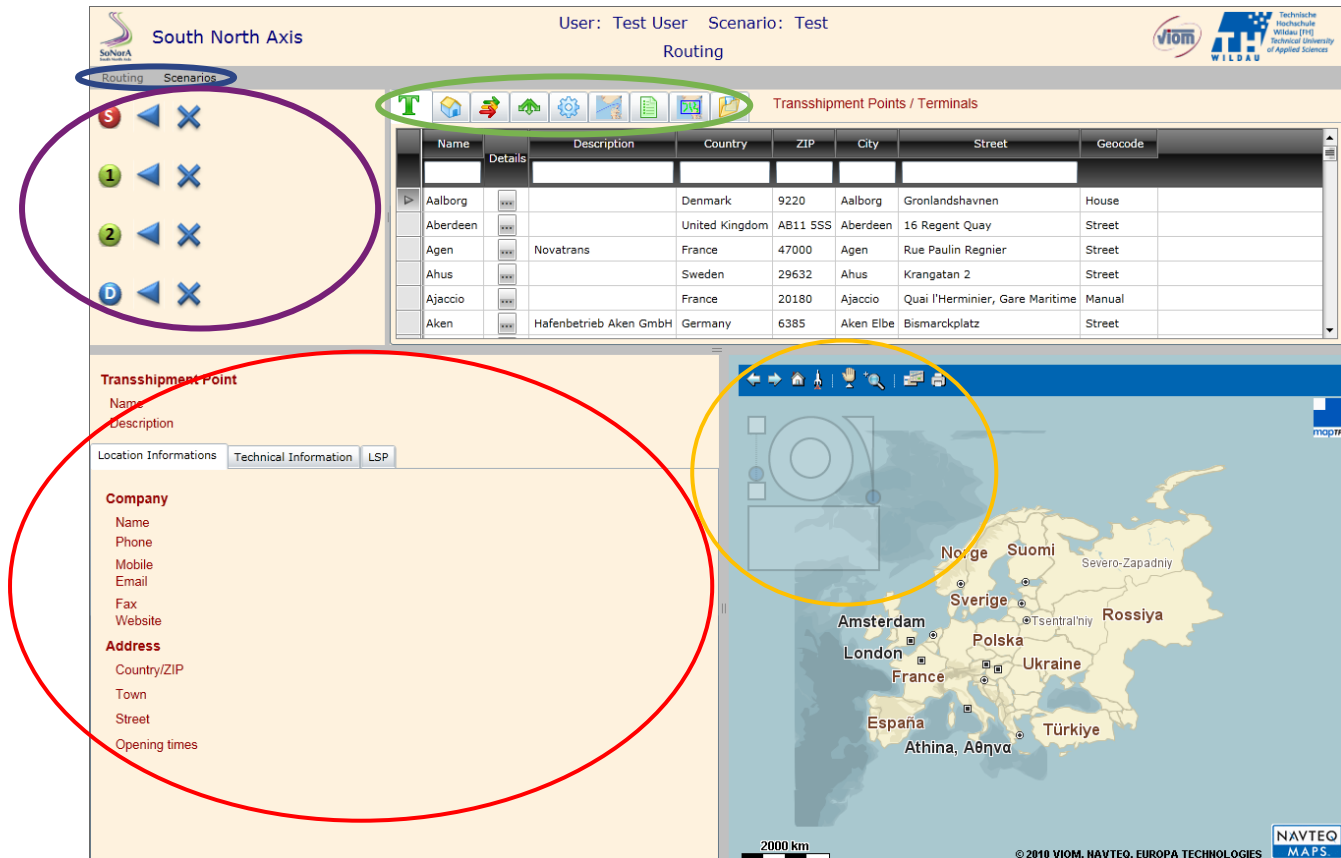
The web-based SoNorA IT-tool is hosted on <http://v07.viom-system.de/WebSonora/index.html>. A link to the IT tool is provided on the SoNorA project homepage [www.sonoraproject.eu](http://www.sonoraproject.eu) in the Core Output section. To get access to the IT tool you have to register. If you have no user account please contact [christine.behnke@th-wildau.de](mailto:christine.behnke@th-wildau.de) or [bertram.meimbresse@th-wildau.de](mailto:bertram.meimbresse@th-wildau.de) to sign up. After you have received your user name and your password, please enter on the homepage of the SoNorA tool your user name in the field “user” and your password in the field “password”. Then press the login button.



The screenshot shows a web browser window titled "Login". On the left is the SoNorA logo with the text "SoNorA South North Axis". To the right, under the heading "Sonora", are three input fields: "User", "Password", and "Scenario". Below the "User" and "Password" fields is a "Login" button. Below the "Scenario" field is a "Select" button.





If you are assigned to several scenarios (as scenario administrator or invited user) choose the scenario you want to work with. All users are assigned at least for the default scenario. Then press the login button. You come to the following start page.






Name	Details	Description	Country	ZIP	City	Street	Geocode
Aalborg	xxx		Denmark	9220	Aalborg	Gronlandshavnen	House
Aberdeen	xxx		United Kingdom	AB11 5SS	Aberdeen	16 Regent Quay	Street
Agen	xxx	Novatrans	France	47000	Agen	Rue Paulin Regnier	Street
Ahus	xxx		Sweden	29632	Ahus	Krangan 2	Street
Ajaccio	xxx		France	20180	Ajaccio	Quai l'Herminier, Gare Maritime	Manual
Aken	xxx	Hafenbetrieb Aken GmbH	Germany	6385	Aken Elbe	Bismarckplatz	Street









On the top within the grey bar there is the menu with the menu items **Routing** and **Scenarios**, the last consisting of the submenu items “network”, “nodes” and “management”, only for users with write access.

On the left side (top) there is a list of the logistics chain with start point , destination point  and two via points  and . The list of logistics chain is only in sight within the menu item “routing”.

On the right hand from the list of the logistics chain there are the main buttons of the menu item “routing” with the following buttons:









 Terminals – list






-  Address search
-  Fixed relations
-  Accessible regions
-  Routing
-  Routing result
-  Transit routing
-  Transit routing results
-  Files

On the left side (bottom) there are details of the selected terminal are shown.

General menu navigation – map toolbar

-  Return to previous map view
-  Step forward to next map view
-  Navigate to the maps origin
-  Zoom shortly out for a quick orientation
-  Left mouse button: Pan mode on / off
-  Left mouse button: Zoom mode on / off
-  Maximise applet / reinsert into browser window
-  Print map cutout

-  Zoom in
-  Zoom out
-  Set zoom level



Pan map by click and drag



Set 3D tilt angle



In the following the functions of the IT-tool are described. At first all functions available for all users are described and afterwards the functions restricted for scenario administrators and invited users.

## 4 Basic functions – available for all users

### 4.1 Intermodal routing

#### 4.1.1 Calculation of a route – without fixed relations


##### 4.1.1.1 From terminal to terminal

If you want to calculate an intermodal route from a start terminal  to destination terminal , proceed as described in the following steps.

Select a terminal from the terminal list through one of the following possible options:

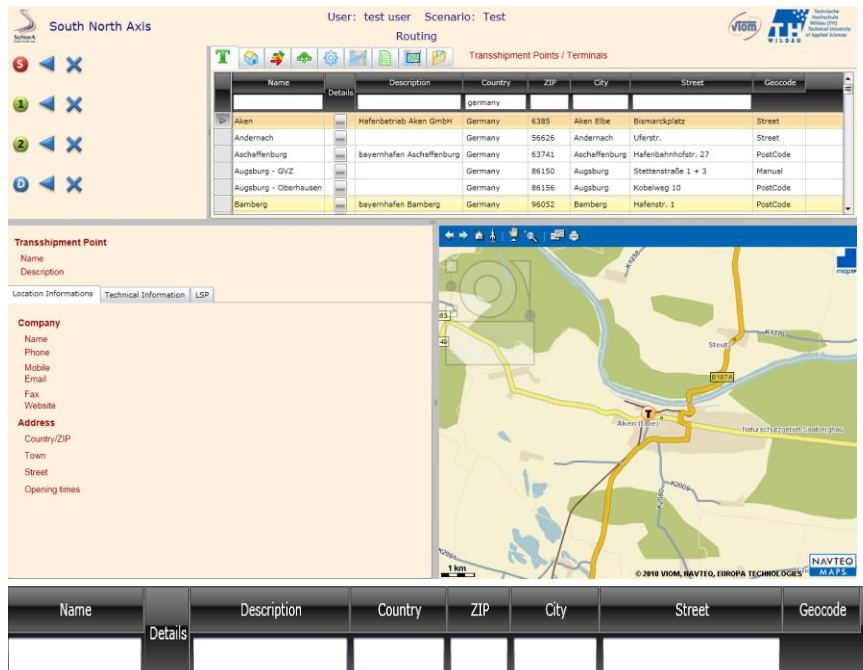
- filter by name
- filter by description
- filter by country
- filter by Zip code
- filter by city name
- filter by street name

Example here: selection by country

- insert e. g. “Germany”, press the tab button
- click on the terminal you want to choose as start (scroll down to get to the end of the list)
- the map zooms to the selected terminal and shows a  at the local position of the terminal

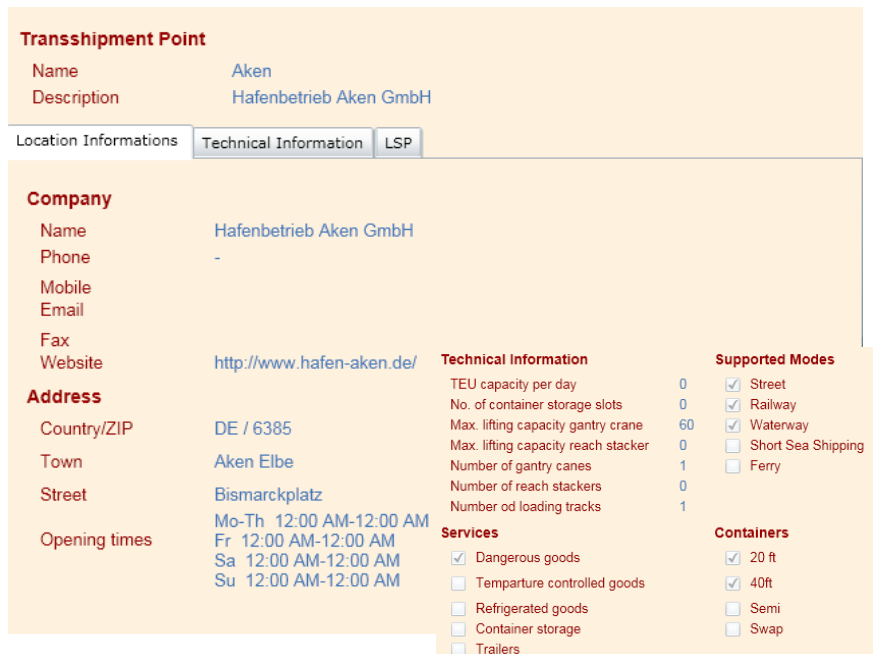
The link in the column “details” leads to detailed information about the terminal.

Example: Aken





The screenshot shows the 'South North Axis' application interface. At the top, it says 'User: test user Scenario: Test'. Below this is a 'Routing' section with a 'Transshipment Points / Terminals' table. The table has columns: Name, Description, Country, ZIP, City, Street, and Geocode. The table lists several terminals, including 'Aken', 'Andernach', 'Aschaffenburg', 'Augsburg - GVZ', 'Augsburg - Oberhausen', and 'Bamberg'. Below the table is a 'Transshipment Point' section with tabs for 'Name', 'Description', 'Location Informations', 'Technical Information', and 'LSP'. The 'Location Informations' tab is selected, showing fields for 'Company' (Name, Phone, Mobile, Email, Fax, Website) and 'Address' (Country/ZIP, Town, Street, Opening times). To the right of the table is a map showing the location of the selected terminal (Aken) on a river.

The terminal list contains all relevant information about a terminal. You can sort the table by name, description, country, Zip code, city name, street name or geo code by clicking on the header of each column. The list will be sorted in alphabetic ascending / descending order.






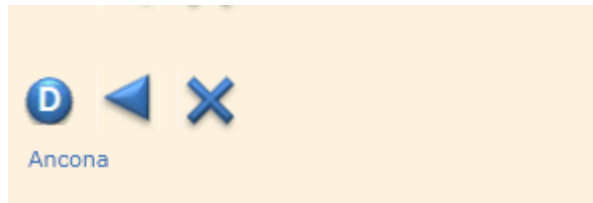
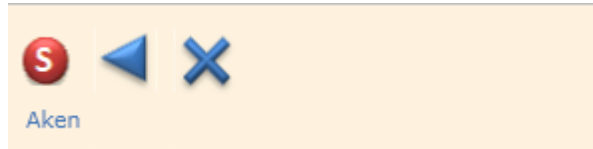
The screenshot shows the detailed information for the 'Aken' terminal. The 'Transshipment Point' section has tabs for 'Name', 'Description', 'Location Informations', 'Technical Information', and 'LSP'. The 'Location Informations' tab is selected, showing fields for 'Company' (Name, Phone, Mobile, Email, Fax, Website) and 'Address' (Country/ZIP, Town, Street, Opening times). The 'Technical Information' section shows various capacity and equipment details. The 'Supported Modes' section shows checkboxes for 'Street', 'Railway', 'Waterway', 'Short Sea Shipping', and 'Ferry'. The 'Containers' section shows checkboxes for '20 ft', '40ft', 'Semi', and 'Swap'. The 'Services' section shows checkboxes for 'Dangerous goods', 'Temperature controlled goods', 'Refrigerated goods', 'Container storage', and 'Trailers'.

Click after the selection of a transshipment point on the blue “assign to start” button and the map view zooms to the location of the start point.

The name of the assigned terminal will be indicated. The  in the map turns into the “start icon” .

Repeat the same procedure for the selection of your destination and click on the blue “assign to destination” button.

The name of the assigned terminal will be indicated. The  in the map turns into the “destination icon” .



Optional:

There is also the option to calculate an intermodal route from a terminal to another terminal via specific terminal. This via-point function offers the possibility to define up to 2 via-points for the start – destination relation in order to prefer specific transport corridors or transshipment terminals. The inclusion of via-points affect the routing process as it is seen as a compulsory element.

Repeat the same procedure for the selection of one or two via points and click on the blue “assign to via point 1” / “assign to via point 2” button.

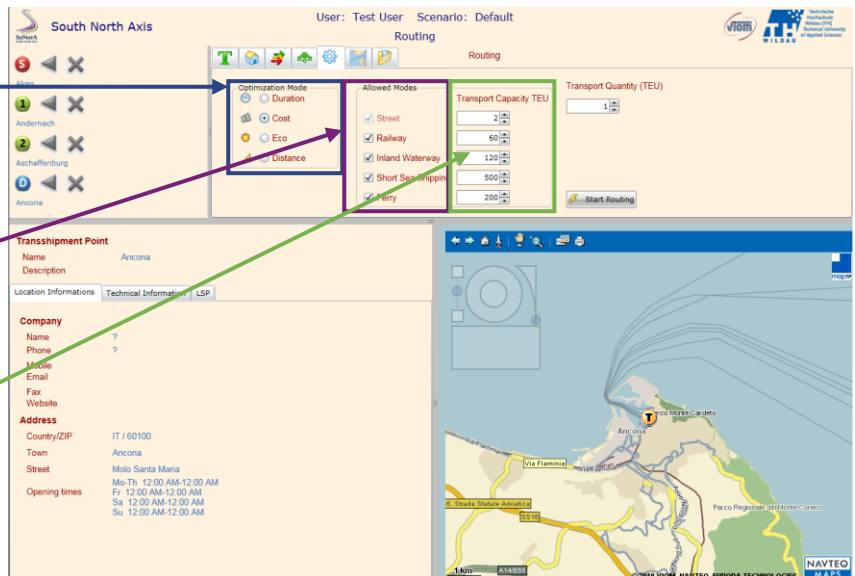
The name of the assigned via-points will be indicated.



Press the “routing” button to get to the routing page.

On the following page specify your query by selecting:

- “**optimization mode**” allows to determine the fastest route (duration), the cheapest route (cost), the most energy-saving route (eco) or the shortest route (distance)
- “**allowed modes**” allows to select one or more modes of transport for the routing
- “**transport capacity TEU**” allows to state maximum transport capacities for each mode of transport. **NOTE:** Changes are only recommended for experienced users”
- “**transport quantity (TEU)**”: enter the volume you want to transport



If changes concerning the selection of the terminals have to be done, use the button “terminals” to get back to the terminal list.



With the “clear” button the terminal settings can be deleted.



With the “routing” button you get again to the routing page.



Press the “start routing” button to start the routing process.

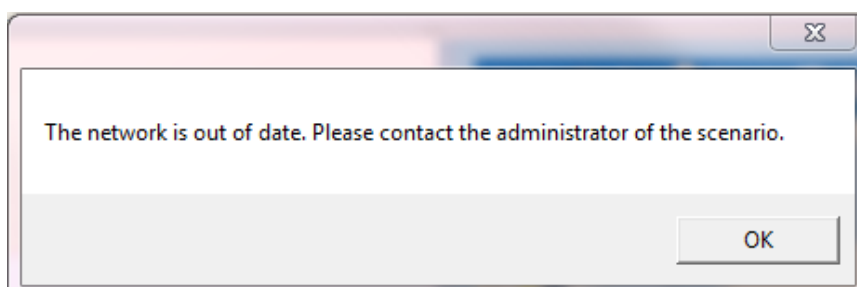


Main calculating operations:

- GIS based generation and display of intermodal transport routes on the basis of underplayed interconnected networks (road, rail, inland waterway, short sea shipping, ferry, transshipment terminals) and according to defined criteria and transport requirements (basic function)
- calculation and comparison of route alternatives by the criteria distance, time, costs and energy consumption to identify the optimal route (alternative routes function)
- calculation of up to 2 defined via-points for the source – destination relation in case of selection of preferred specific transport corridors or transshipment terminals (via-point function)
- presentation of information (contacts, service portfolio) of suitable logistics service providers (e. g. special provider for inland navigation) and transshipment terminals for each part of the generated transport chains (information function)



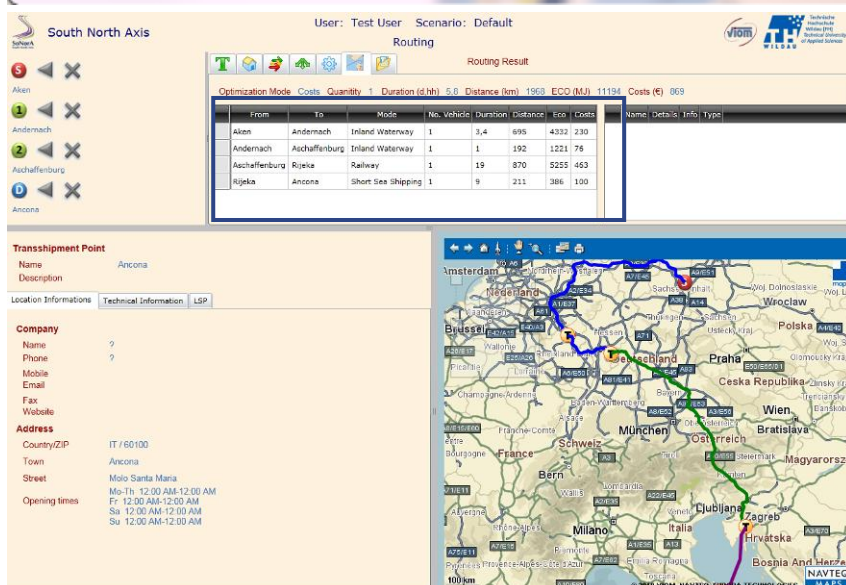
If you get the information “the network is out of date” please contact the administrator of the scenario (who assigned you to the scenario), as he has to update the network.



The next page shows the routing result based on the chosen optimisation mode. The following information for the whole transport chain as well as for individual route segments are available:

- quantity to be transported
- duration
- distance
- energy consumption
- costs

A segment is a section from one terminal to another terminal without changing the mode of transport.

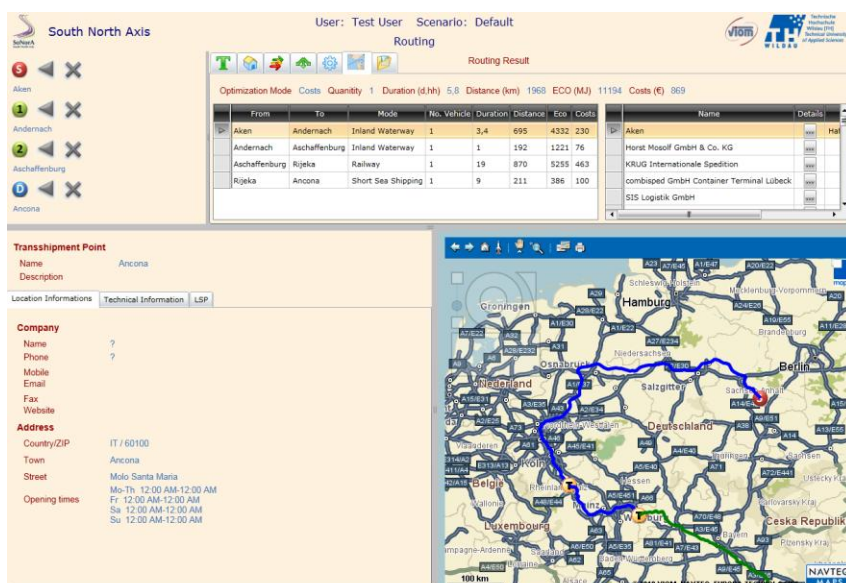


From	To	Mode	No. Vehicle	Duration (d:hh)	Distance (km)	Eco (MJ)	Costs (€)
Aken	Andemach	Inland Waterway	1	3,4	695	4332	230
Andemach	Aschaffenburg	Inland Waterway	1	1	192	1221	76
Aschaffenburg	Rijeka	Railway	1	19	870	5255	463
Rijeka	Ancona	Short Sea Shipping	1	9	211	386	100

If changes, e. g. concerning the selection of optimisation mode, modes of transport allowed or quantities, etc, have to be done, use the “routing” button to get back to the routing page.

Geographical details of the routing segments can be displayed in the map through the selection of a single segment in the table:

- click on routing segment
- map zooms to the segment
- segment details are displayed in a table



From	To	Mode	No. Vehicle	Duration (d:hh)	Distance (km)	Eco (MJ)	Costs (€)
Aken	Andemach	Inland Waterway	1	3,4	695	4332	230
Andemach	Aschaffenburg	Inland Waterway	1	1	192	1221	76
Aschaffenburg	Rijeka	Railway	1	19	870	5255	463
Rijeka	Ancona	Short Sea Shipping	1	9	211	386	100

#### Table routing segments:

##### Sequence of columns

- name of start terminal of a segment
- name of end terminal of a segment
- mode of transport within the segment
- number of vehicles used in the segment
- duration per segment (in h)
- distance per segment (in km)
- energy consumption per segment (in MJ)
- costs per segment (in €)

##### Sequence of row entries

- from start terminal to terminal (segment 1)
- from terminal to terminal (segments 2, 3,...)
- from terminal to end terminal (last segment)

#### Table routing segments

	From	To	Mode	No. Vehicle	Duration	Distance	Eco	Costs
▶	Aken	Andernach	Inland Waterway	1	3,4	695	4332	230
	Andernach	Aschaffenburg	Inland Waterway	1	1	192	1221	76
	Aschaffenburg	Rijeka	Railway	1	19	870	5255	463
	Rijeka	Ancona	Short Sea Shipping	1	9	211	386	100

#### Table segment details:

##### Sequence of columns

- name of terminal or logistics service provider
- link to details (leading to detailed information about the selected terminal / logistics service provider)
- additional information (e. g. name of terminal operator)
- type (terminal [TSP] or logistics service provider [LSP])

#### Table segment details

	Name	Details	
▶	Aken	...	Ha
	Horst Mosolf GmbH & Co. KG	...	
	KRUG Internationale Spedition	...	
	combisped GmbH Container Terminal Lübeck	...	
	SIS Logistik GmbH	...	

##### Sequence of row entries

- list of terminals and logistics service providers

#### 4.1.1.2 From free address to free address

Beginning from the start page, click on the button “address search”.

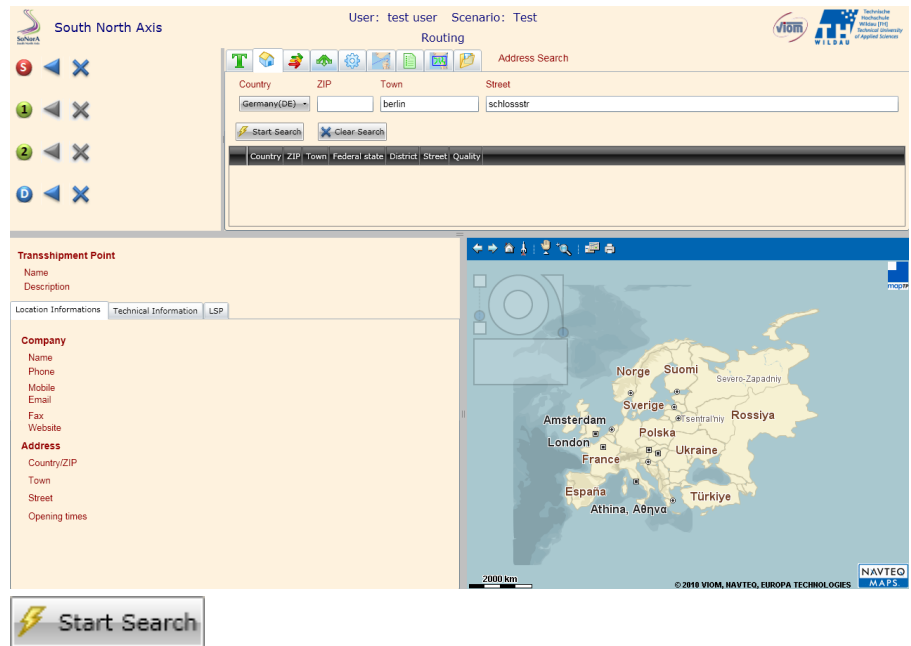




To search an address there are several options. After the selection of the country

- search by city name
- search by Zip code
- search by city name + street name

Example here: selection by city name + street name. Select e. g. “Germany”, city name and street name.



South North Axis

User: test user Scenario: Test

Routing

Address Search

Country: Germany(DE) ZIP: Town: berlin Street: schlossstr

Start Search Clear Search

Transshipment Point

Name Description

Location Informations Technical Information LSP

Company

Name Phone Mobile Email Fax Website

Address

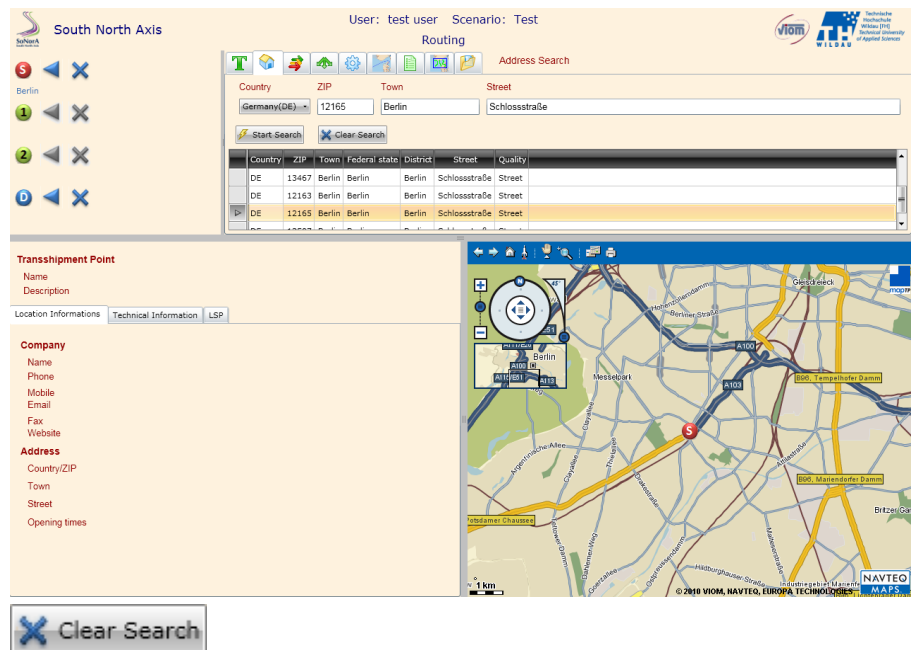
Country/ZIP Town Street Opening times

Start Search

Press the “start search” button to start the query.

Click on the address line you want to choose as start. The map zooms to the selected point and shows a pin at the local position of the address.

Click on the blue “assign to start” button. The assigned address will be indicated. The pin in the map turns into the “start icon”.



South North Axis

User: test user Scenario: Test

Routing

Address Search

Country: Germany(DE) ZIP: 12165 Town: Berlin Street: Schlossstraße

Start Search Clear Search

Country	ZIP	Town	Federal state	District	Street	Quality
DE	13467	Berlin	Berlin	Berlin	Schlossstraße	Street
DE	12163	Berlin	Berlin	Berlin	Schlossstraße	Street
DE	12165	Berlin	Berlin	Berlin	Schlossstraße	Street

Transshipment Point

Name Description

Location Informations Technical Information LSP

Company

Name Phone Mobile Email Fax Website

Address

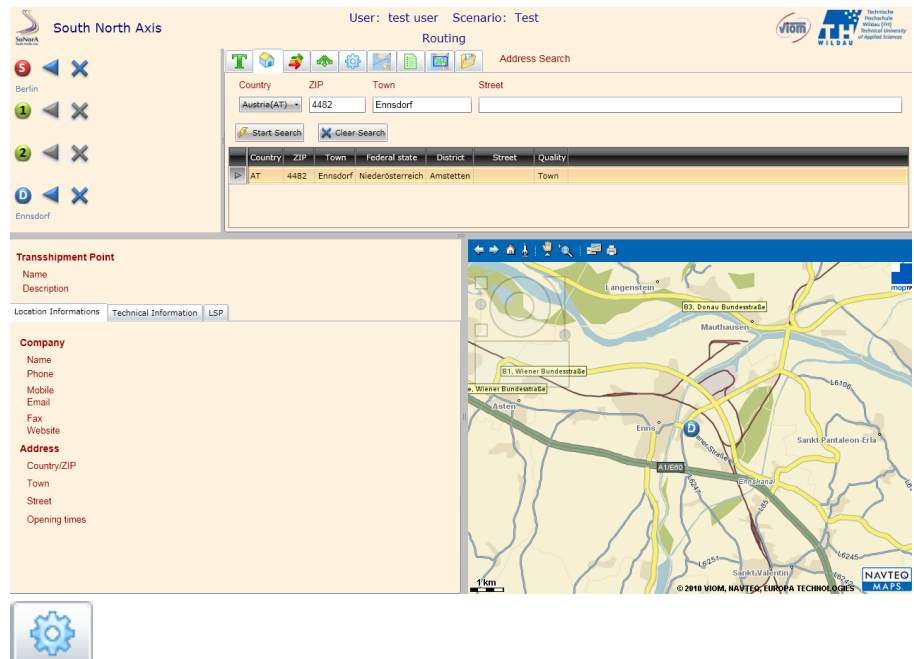
Country/ZIP Town Street Opening times

Clear Search

Press the “clear search” button in order to delete all filled in address fields.

Then repeat the same procedure for the selection of your destination address and assign to destination.

**NOTE:** Free addresses can only be used as start or destination of a routing query. Therefore as via-points only terminals from the terminal list can be selected.

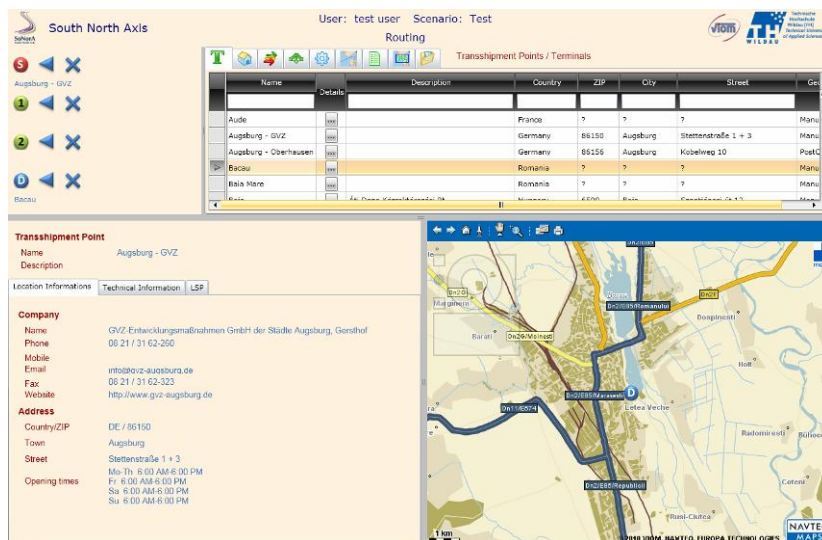


Press the “routing” button to get to the routing page and continue as already described in the previous chapter.

#### 4.1.2 Calculation of a route – with fixed relations

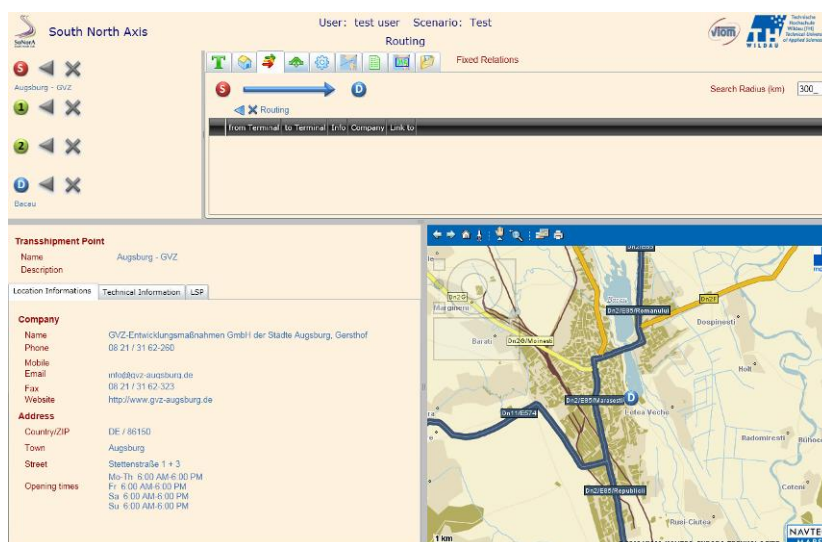
The IT-tool offers the possibility to include fixed relations in the routing process. Fixed relations are relations where intermodal transport service offers already exist and which will be run by a transport operator. The existing market offer will be included as the backbone in the routing. That means it serves as main run for the complete and entire routing process and will be therefore pre-defined due to the selection.

The calculation of a route with fixed relations can be realised after the determination of a start and destination (either terminal and / or free address).

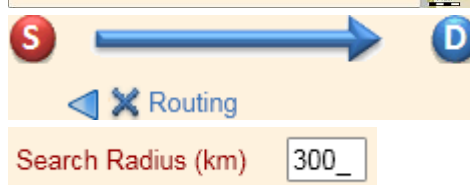


After the assignment of a start and a destination as described in the previous chapters, press the button “fixed relations”.

You get to the page as pictured on the right.



Press the blue arrow between start and destination symbol.

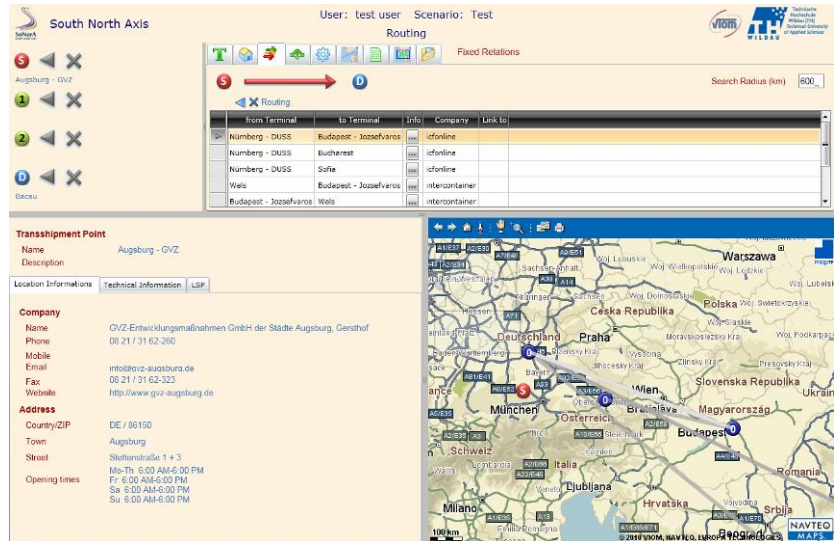


**NOTE:** The default setting of search for fixed relations is within a radius of 300 km from start and destination. If no values were found increase the radius.

Results at radius 600 km:

**NOTE:** If no fixed relation is suitable increase the radius again to get further options for fixed relations, but be aware that larger search radii can provide you with fixed relations which are not in line with your wished transport direction.

Select from the list below the arrow a fixed relation by clicking on the relation. The selected fixed relation turns into white colour.



From Terminal	To Terminal	Info	Company	Link to
Nürnberg - DUS	Budapest - Jozsefváros	icfonline		
Nürnberg - DUS	Bucharest	icfonline		
Nürnberg - DUS	Sofia	icfonline		
Wels	Budapest - Jozsefváros	intercontainer		
Budapest - Jozsefváros	Wels	intercontainer		

**Transshipment Point**  
Name: Augsburg - GVZ  
Description: Augsburg - GVZ

**Company**  
Name: GVZ-Entwicklungsmaßnahmen GmbH der Städte Augsburg, Gersthof  
Phone: 00 21 / 31 62-250  
Mobile: info@gvz-augsburg.de  
Email: 00 21 / 31 62-323  
Fax: http://www.gvz-augsburg.de  
Website: info@gvz-augsburg.de

**Address**  
Country/ZIP: DE / 86150  
Town: Augsburg  
Street: Stationsstraße 1 + 3  
Opening times: Mo-Th 9:00 AM-6:00 PM  
Fr 6:00 AM-6:00 PM  
Sa 9:00 AM-6:00 PM  
Su 9:00 AM-6:00 PM

Press the button “assign fixed relation between start and destination” (to be found between search arrow and result list).

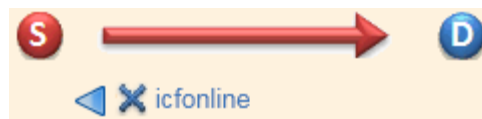
The name of the company which operates the chosen fixed relation will be indicated (if available).

The links in the column “info” lead to detailed information about the fixed relation which will be shown left hand from the map.

An assigned fixed relation can be removed by pressing the button “clear fixed relation between start and destination”.

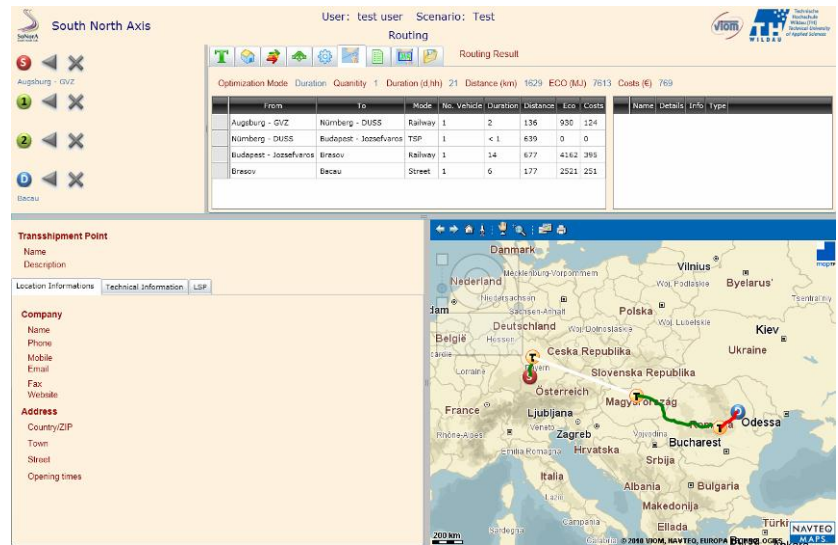
Press the button “routing” to get to the routing page and continue as already described previously (individual settings).

Then press the “start routing” button to start the query.





The chosen fixed relation is considered in the further routing process (shown as white connection).



South North Axis User: test user Scenario: Test Routing

Routing Result

From	To	Mode	No. vehicle	Duration	Distance (km)	ECO (MJ)	Costs (€)
Augsburg - GVZ	Nürnberg - DIUS	Railway	1	2	136	930	124
Nürnberg - DIUS	Budapest - Josefvaros	TSP	1	< 1	639	0	0
Budapest - Josefvaros	Eiravos	Railway	1	14	677	4162	398
Eiravos	Bacau	Street	1	6	177	2521	251

Transshipment Point

Name: Augsburg - GVZ

Description:

Location Information Technical Information LSP

Company

Name: DIUS - Deutsche Umschlaggesellschaft Schiene-Straße (DIUS) m

Phone: (0621) 5032507

Mobile: Augsburg-Oberhausen@dius-term

Email: (0621) 5032511

Fax: www.dius-terminal.de

Website:

Address

Country/ZIP: DE / 86156

Town: Augsburg

Street: Kobelweg 10

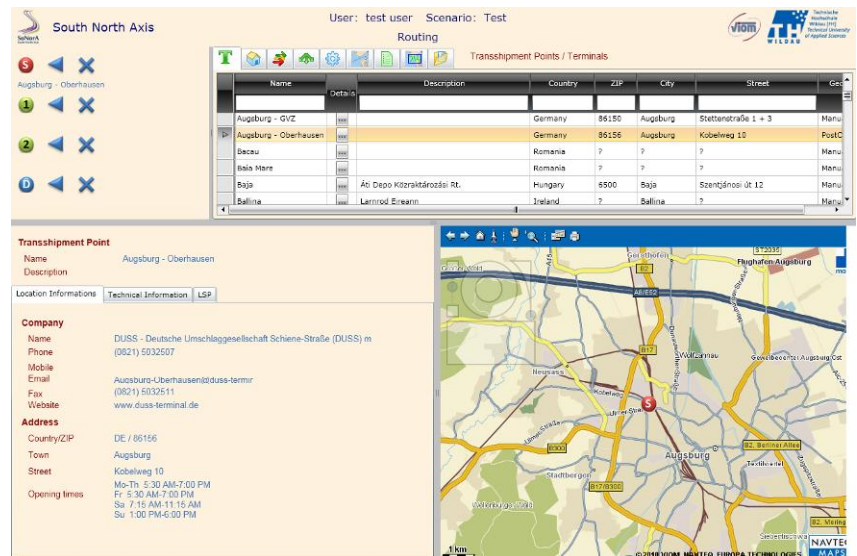
Opening times

Mo-Th: 5:30 AM-7:00 PM  
Fr: 5:30 AM-7:00 PM  
Sa: 7:15 AM-11:15 AM  
Su: 1:00 PM-6:00 PM

## 4.2 Analysis of accessibility

The IT-tool offers the possibility to analyse the accessibility of terminals regarding criteria like duration, distance, costs and energy consumption.

The accessibility analysis can be realised after the selection of a terminal as start point (which is displayed in the map), free address is also possible.



South North Axis User: test user Scenario: Test Routing

Transshipment Points / Terminals

Name	Description	Country	ZIP	City	Street	Geo
Augsburg - GVZ		Germany	86156	Augsburg	Stettinstraße 1 + 3	Manu
Augsburg - Oberhausen		Germany	86156	Augsburg	Kobelweg 10	PostC
Bacau		Romania	?	?	?	Manu
Baja		Hungary	6500	Baja	Szentjánosi út 12	Manu
Bellina		Ireland	?	Bellina	?	Manu

Transshipment Point

Name: Augsburg - Oberhausen

Description:

Location Information Technical Information LSP

Company

Name: DIUS - Deutsche Umschlaggesellschaft Schiene-Straße (DIUS) m

Phone: (0621) 5032507

Mobile: Augsburg-Oberhausen@dius-term

Email: (0621) 5032511

Fax: www.dius-terminal.de

Website:

Address

Country/ZIP: DE / 86156

Town: Augsburg

Street: Kobelweg 10

Opening times

Mo-Th: 5:30 AM-7:00 PM  
Fr: 5:30 AM-7:00 PM  
Sa: 7:15 AM-11:15 AM  
Su: 1:00 PM-6:00 PM

After the assignment of the start point as described previously, press the button “accessible regions”.

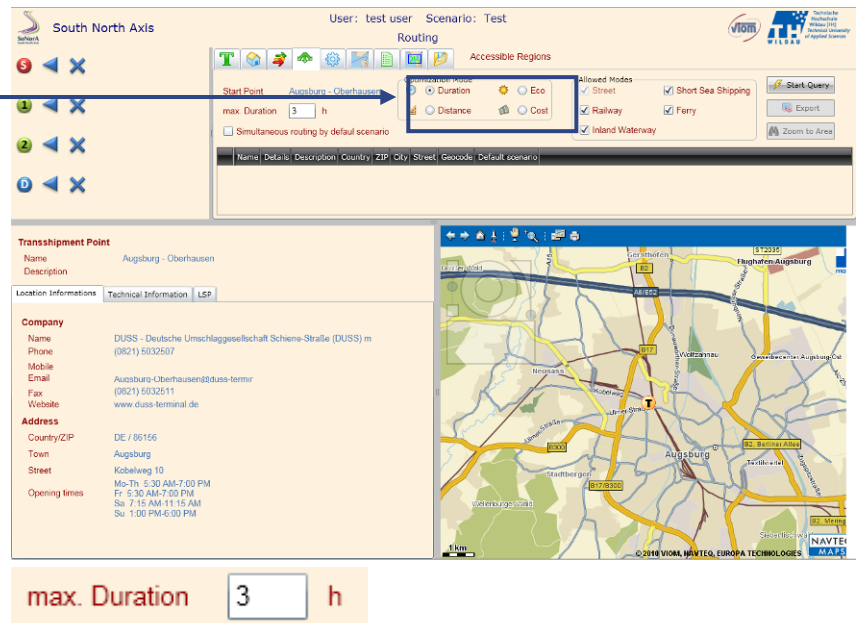


You get to the page as shown on the right.

Select an **optimisation mode**:

- duration
- distance
- energy consumption (eco)
- costs

Example here: duration



Enter a maximum value as basis for the analysis.

**NOTE:** Start with small values as the calculation time increases exponential.

You can disallow modes of transport considered in the accessibility analysis.



Start query.

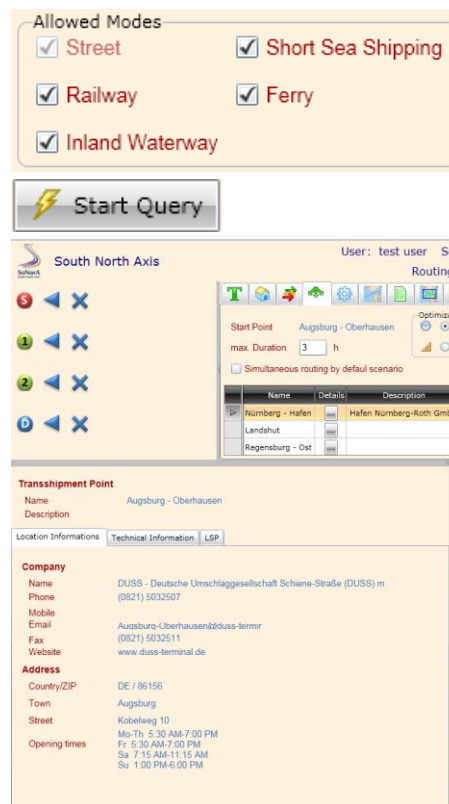
The next page lists the results of the accessibility analysis based on chosen optimisation mode and maximum value.

The map pictures the results as isolines (e. g. in case of optimisation by duration as isochrones):

- value of outer line = 100 %
- value of middle line = 66 %
- value of inner line = 33 %

All terminals which can be reached within the requested time (or if chosen as optimisation mode within the requested distance, costs or energy consumption) will be

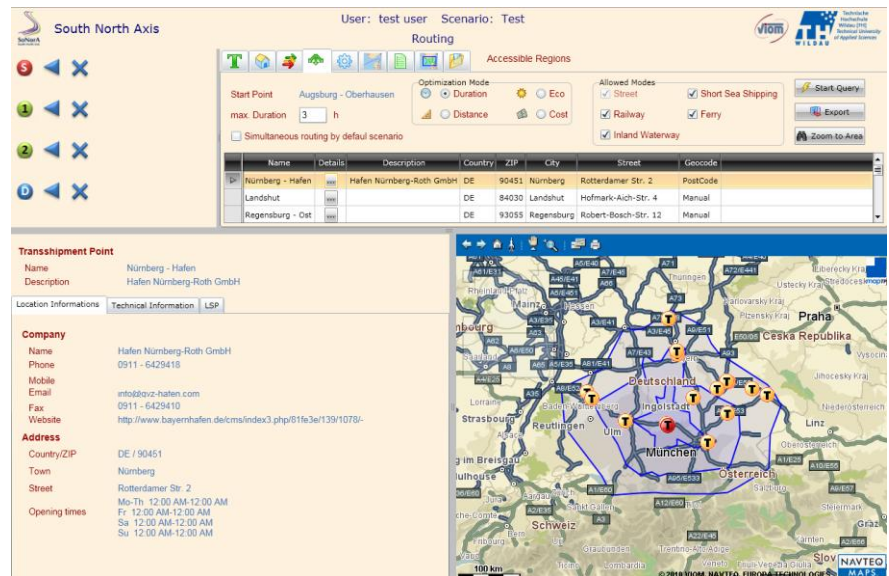
indicated , the start point is indicated in .



With the “zoom to area” button the result of the accessibility analysis will be centred in the map.

The link in the column “details” leads to detailed terminal information.

Example: Nürnberg-Hafen

Name	Details	Description	Country	ZIP	City	Street	Geocode
Nürnberg - Hafen	Details	Hafen Nürnberg-Roth GmbH	DE	90451	Nürnberg	Rotterdam Str. 2	PostCode
Landshut	Details	Hofmark-Aich-Str. 4	DE	84030	Landshut		Manual
Regensburg - Ost	Details	Robert-Bosch-Str. 12	DE	93055	Regensburg		Manual

**Transshipment Point**

Name: Nürnberg - Hafen  
Description: Hafen Nürnberg-Roth GmbH

Location Informations: Technical Information LSP

**Company**

Name: Hafen Nürnberg-Roth GmbH  
Phone: 0911 - 6429416  
Mobile:  
Email: info@qvz-hafen.com  
Fax: 0911 - 6429410  
Website: http://www.bayernhafen.de/cms/index3.php/01fe3e/139/1078/

**Address**

Country/ZIP: DE / 90451  
Town: Nürnberg  
Street: Rotterdam Str. 2

**Opening times**

Mo-Th: 12:00 AM-12:00 AM  
Fr: 12:00 AM-12:00 AM  
Sa: 12:00 AM-12:00 AM  
Su: 12:00 AM-12:00 AM

## 5 Creation of scenarios – available for scenario administrators

### 5.1 Basic information for working with a scenario

The IT tool consists of street, railway, inland waterway, ferry and short sea shipping networks, intermodal nodes and information. A scenario is a complete copy of all network segments, nodes and information and will be stored separately on the server of the IT tool. The scenario administrator is the only person with the right to change anything in the scenario.

The below described functions are only available for scenario administrators. If you want to create an own scenario you have to contact as well [christine.behnke@th-wildau.de](mailto:christine.behnke@th-wildau.de) or [bertram.meimbresse@th-wildau.de](mailto:bertram.meimbresse@th-wildau.de), then a scenario will be compiled by copying the default. From this point on the scenario administrator can edit the scenario, make changes and share it with other users. A scenario is valid 1 month from the compilation on.

In general the scenario administrator can do the following changes in a scenario:



- Edit parameters of terminals
- Add new terminals
- Delete terminals
- Edit parameters of network segments
- Add new network segments
- Delete network segments
- Disable network segments

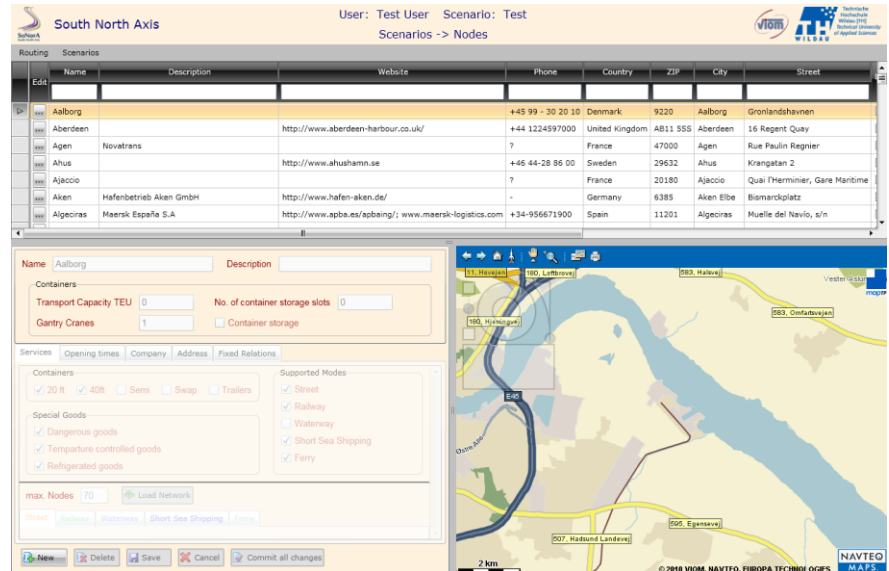
With these changes in a scenario the following situations can be simulated and evaluated by routing and accessibility comparison, e.g.:

- Changes in infrastructure of a terminal
- Extension of a terminal
- Building a new terminal
- Alternative locations of a terminal
- Change of terminal access from public to private
- Improvement of a transport link
- Add a new transport link
- Obstacles on a transport link

By changing the default networks and parameters of the nodes (intermodal terminals) within the menu item “scenarios” **Scenarios** the scenario administrator can change the scenario.

## 5.2 Edit nodes (0.5.6.4 Evaluation tool for nodes)

Select the submenu item “nodes”.  
On the following page you can edit parameters of terminals as well as add and delete intermodal terminals. By changing nodes and their parameters the scenario administrator can simulate e. g. the case of changes in infrastructure of terminals, construction of new terminals, changing the access from public to private, etc. The impact of these changes on the routing and accessibility analysis can be tested with the comparison functions.



Name	Description	Website	Phone	Country	ZIP	City	Street
Aalborg			+45 99 - 30 20 10	Denmark	9220	Aalborg	Gronlandshavnen
Aberdeen		http://www.aberdeen-harbour.co.uk/	+44 1224597000	United Kingdom	AB11 5SS	Aberdeen	16 Regent Quay
Agen	Novatrans		?	France	47000	Agen	Rue Paulin Ragnier
Ahus		http://www.ahushamn.se	+46 44-28 86 00	Sweden	29632	Ahus	Krangsatan 2
Ajaccio			?	France	20180	Ajaccio	Quai l'herminier, Gare Maritime
Aken	Hafenbetrieb Aken GmbH	http://www.hafen-aken.de/	-	Germany	6385	Aken Elbe	Bismarckplatz
Algeciras	Maersk España S.A	http://www.apba.es/apbaing/; www.maersk-logistics.com	+34-956671900	Spain	11201	Algeciras	Muelle del Navío, s/n

**Name:** Aalborg **Description:**

**Containers:**  
 Transport Capacity TEU: 0 **No. of container storage slots:** 0  
 Gantry Cranes: 1 **Container storage:** ☐

**Services:** Opening times, Company, Address, Fixed Relations

**Containers:**  
☒ 20 ft ☒ 40 ft ☐ Semi ☐ Swap ☐ Trailers

**Special Goods:**  
☒ Dangerous goods  
☒ Temperature controlled goods  
☒ Refrigerated goods

**Supported Modes:**  
☒ Street  
☒ Railway  
☐ Waterway  
☒ Short Sea Shipping  
☒ Ferry

**max. Nodes:** 70 **Load Network:**

**Buttons:** New, Delete, Save, Cancel, Commit all changes

### 5.2.1 Select a network segment

Select a terminal from the list and press the button in the column “edit”.



## 5.2.2 Edit terminal information and parameters

### 5.2.2.1 Edit terminal information

On the following page you can change all information (**without impact on routing and accessibility analysis**):

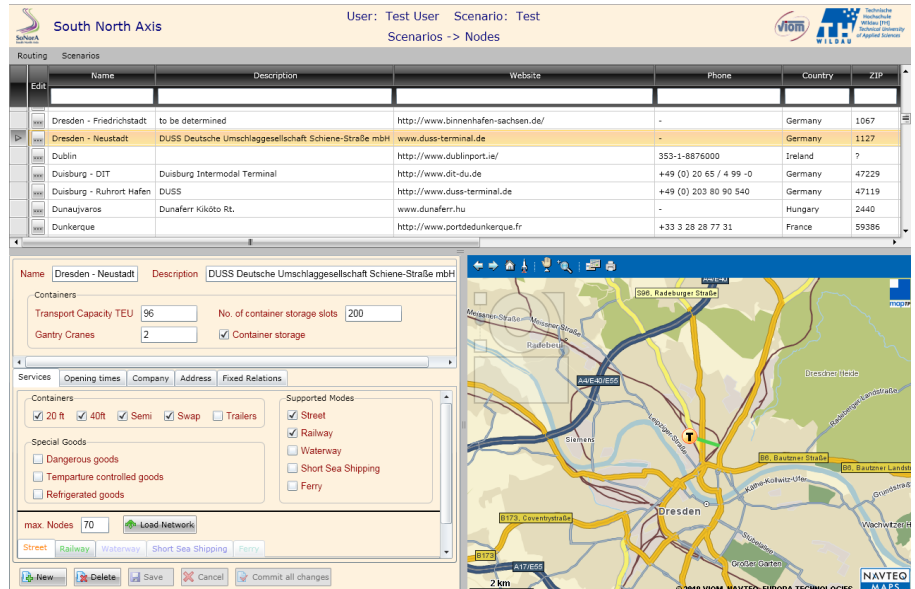
General information:

- name
- description
- transport capacity (number of TEU)
- number of gantry cranes
- number of container storage slots
- container storage possible?

Services information:

- handling of 20 feet containers / 40 feet containers / semi-trailers / swap bodies / trailers possible?
- handling of special goods (dangerous goods / temperature controlled goods / refrigerated goods) possible?

To edit the other information of the terminal press the relevant.



Name	Description	Website	Phone	Country	ZIP
Dresden - Friedrichtadt	to be determined	http://www.binnenhafen-sachsen.de/	-	Germany	1067
Dresden - Neustadt	DUSS Deutsche Umschlaggesellschaft Schiene-Straße mbH	www.duss-terminal.de	-	Germany	1127
Dublin		http://www.dublinport.ie/	353-1-8876000	Ireland	?
Duisburg - DIT	Duisburg Intermodal Terminal	http://www.dit-du.de	+49 (0) 20 65 / 4 99 -0	Germany	47229
Duisburg - Ruhrort Hafen	DUSS	http://www.duss-terminal.de	+49 (0) 203 80 90 540	Germany	47119
Dunaújváros	Dunaferri Kikötés Rt.	www.dunaferri.hu	-	Hungary	2440
Dunkerque		http://www.portdedunkerque.fr	+33 3 28 28 77 31	France	59386

Opening times    Company    Address

### 5.2.2.2 Edit terminal parameters

The terminal parameters define the performance of the terminal and of the connection to the transport network.

**Changes will affect routing and accessibility analysis.** Terminals with smaller values will be privileged in the routing and accessibility analysis.

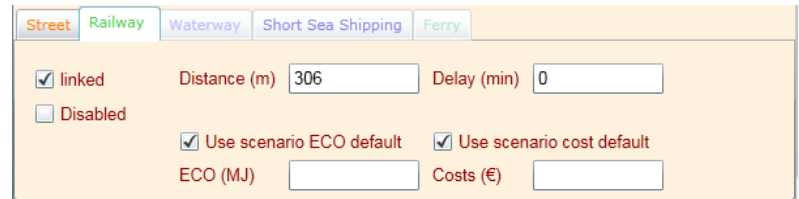
If you press on the buttons of the respective transport modes you can see:

- if the transport mode is already linked to the respective network the button “linked” is marked with a tick
- if the transport mode is already linked to the network: the distance between terminal and network

If the transport mode is already linked to the network you can enter a delay time as time needed for the handling for this transport mode including transfer time from main line to the terminal and vice versa as well as transshipment time and waiting time.

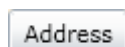
You can disable the connection of the terminal to the respective network by ticking the button “disabled”.

Furthermore you can select whether you want to use the scenario default values for ECO (energy consumption) and costs for the handling of one TEU by this transport mode. If you want to insert own values, delete the tick of the respective check box “use scenario ECO default” / “use scenario cost default” and insert the wished values in the below fields.

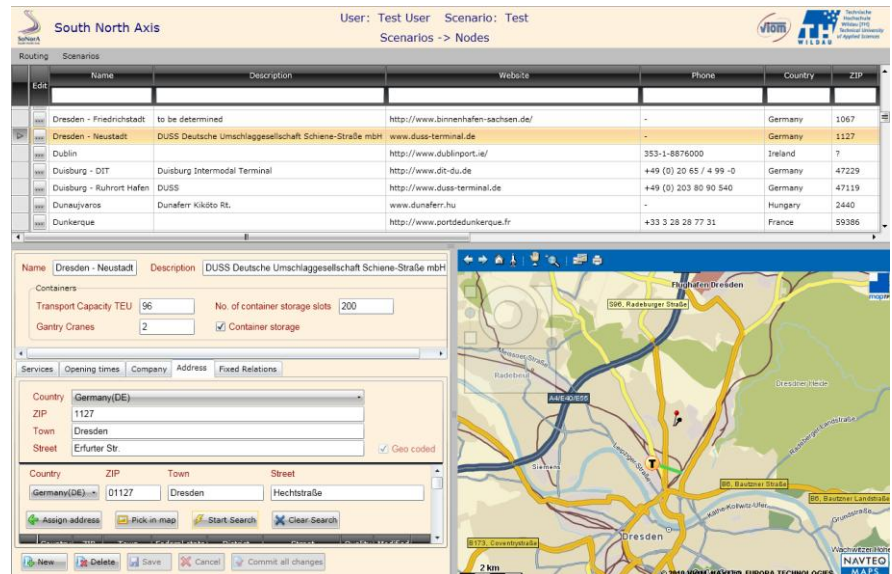


### 5.2.2.3 Edit / change the location of a terminal

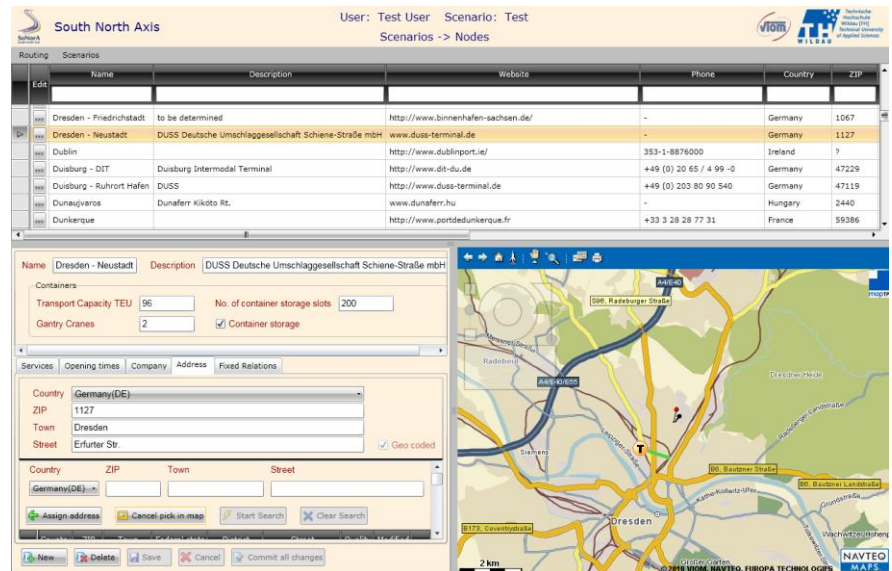
The location of a terminal influences the connection to the intermodal transport network. To edit the address and geographical position of the terminal press the button “address”. You have 2 options to edit the geographical position of a terminal:



1.: Select country, insert ZIP, town and street in the lower address fields and press button “start search”. The geographical position will be indicated with a little pin in the map. By pressing the button “clear search” all fields will be emptied.




2.: Search geographical position in map: press the button “pick in map” and double-click with the right mouse button on the position in the map. The position will be indicated with a little pin in the map.



To assign the geographical position after execution of option 1 or 2 you have to press the button “assign address”.

 Assign address

To unassign all fixed relations press the button “unassign all”.

 Unassign all



### 5.2.2.4 Edit terminal access lines to the transport network

By editing the terminal access lines to the transport network you can define possible transport modes to be handled at a terminal.

Press the button “services”.

Supported modes:

Tick the modes of transport you wish to be considered in your scenario. You can afterwards only link the modes of transport that are ticked here.

Afterwards you can link the terminal with the network of the respective transport modes. Therefore press the button “load network”.

To link the terminal to the network click on one of the red circles of the respective network (having the same colour as the letters of the respective button).

street = orange

railway = green

waterway = violet

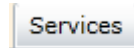
short sea shipping = dark blue

ferry = turquoise

A direct connection between the network and the terminal appears.

If you press on the buttons of the respective transport modes you can see:

- if the transport mode is already linked to the respective network the button “linked” is marked with a tick
- if the transport mode is already linked to the network: the distance between terminal and network



Supported Modes

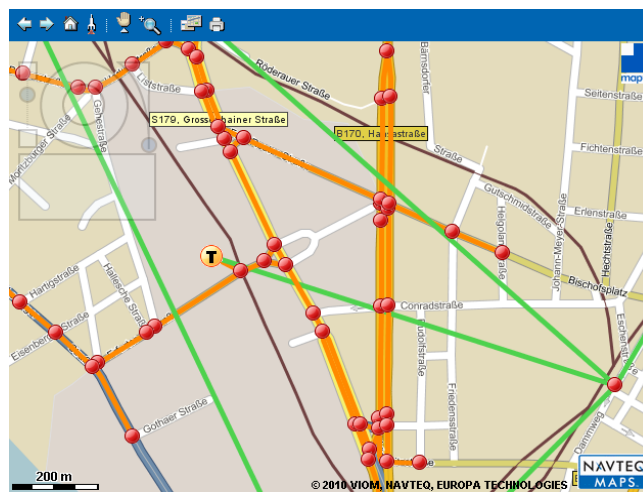
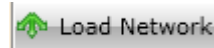
☒ Street

☒ Railway

☐ Waterway

☐ Short Sea Shipping

☐ Ferry



Street Railway Waterway Short Sea Shipping Ferry

☒ linked Distance (m) 306 Delay (min) 0

☐ Disabled

☒ Use scenario ECO default ☒ Use scenario cost default

ECO (MJ) Costs (€)

You can disable the connection of the terminal to the respective network by ticking the button “disabled”.

### 5.2.2.5 Edit “fixed relations” serving a terminal

To define fixed relations (existing intermodal train offers of companies) as connection between the new terminal and another one press the button “fixed relations”. These fixed relations will be available in the routing with fixed relations.

On the following page all terminals within the scenario are listed. To define a fixed relation to the terminal which the scenario administrator edits at this stage (origin of the fixed relation), tick the small box in the “assigned” column of the respective target terminal (destination of the fixed relation).

Fixed Relations

Assigned	Name	Description	Country
<input type="checkbox"/>	Dortmund		DE
<input type="checkbox"/>	Dourges	DELTA 3	FR
<input type="checkbox"/>	Dover		GB
<input type="checkbox"/>	Drammen	NSB Gods	NO
<input checked="" type="checkbox"/>	Dresden - Friedrichstadt	to be determined	DE

Assign all    Show: ☒ All ☐ Assigned ☐ Unassigned

Unassign all

You can select whether all terminals, only assigned fixed relations or only unassigned terminals will be listed in the table by pressing the respective button.

Show: ☒ All ☐ Assigned ☐ Unassigned

To assign all listed terminals as fixed relations press the button “assign all”.

Assign all

To unassign all fixed relations press the button “unassign all”.

Unassign all

### 5.2.2.6 Save / cancel

To save all changes press the button “save”.

Save

If you want to clear all changes made since the last save, press the button “cancel”.

Cancel

### 5.2.3 Add new terminal

New terminals will be included in the routing and accessibility analysis as well as the existing ones. To add a new terminal press the button “new”.

New



You can edit information and parameters like above described:

- general information
- services – necessary for connection to transport network
- opening times
- company information
- address – necessary for connection to transport network
- fixed relations

**NOTE:** To select the supported modes you have to define the geographical position first (tab sheet “address”).

To save the new terminal press the button “save”. Now a new terminal will be integrated in your scenario. It can be used as start, via and destination point of an intermodal transport. The existence of such a new terminal will affect also the routing results, the accessibility analyses and the comparison analyses between default and scenario.



## 5.2.4 Delete terminal

Deleted terminals are not available in the intermodal transport network and cannot be used in the routing and accessibility analysis.

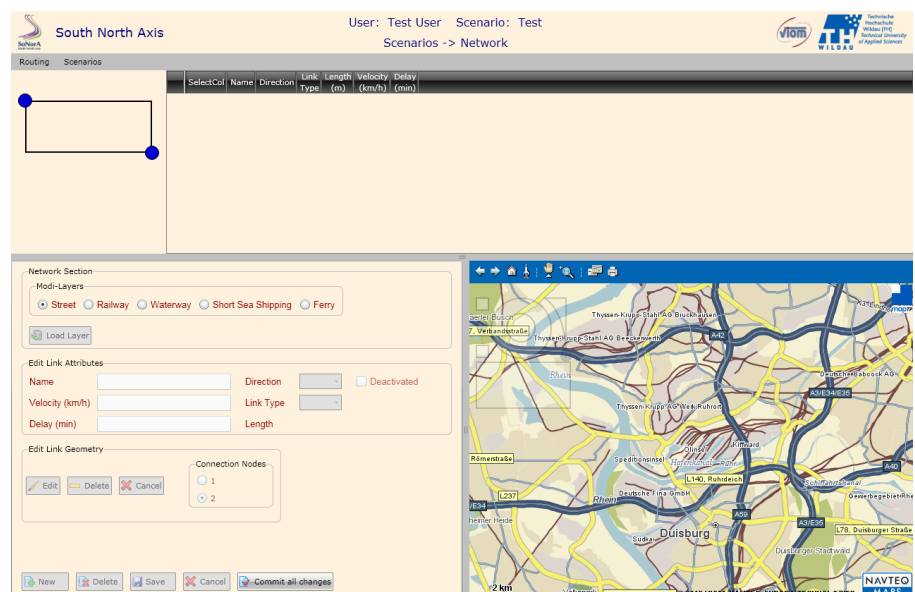
Select a terminal from the list and press the button in the column “edit”.

Press the button “delete”.



## 5.3 Edit network (O.5.6.5 Evaluation tool for networks)

Select the submenu item “network”. On the following page you can edit parameters of network segments, add, delete and disable network segments.



### 5.3.1 Select a network segment

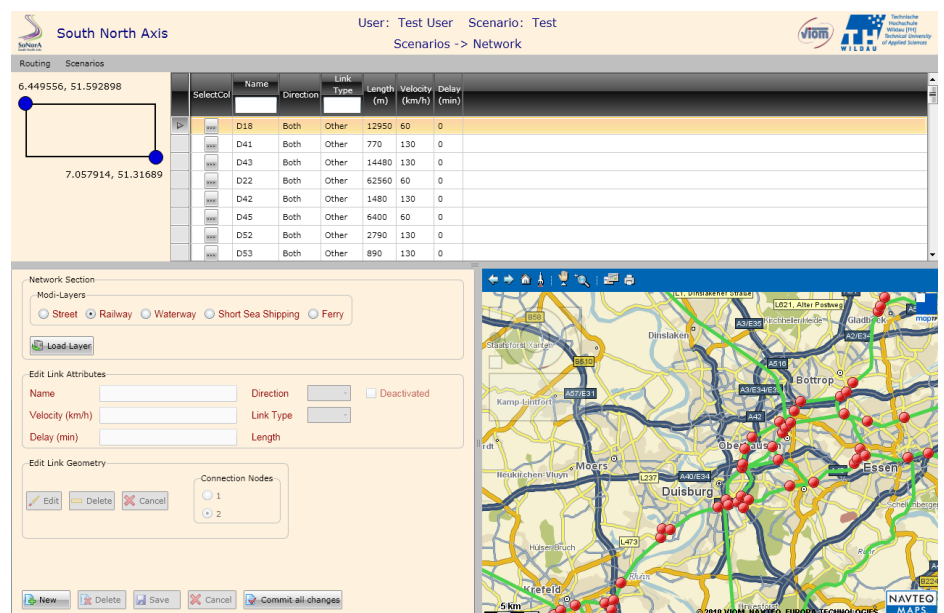
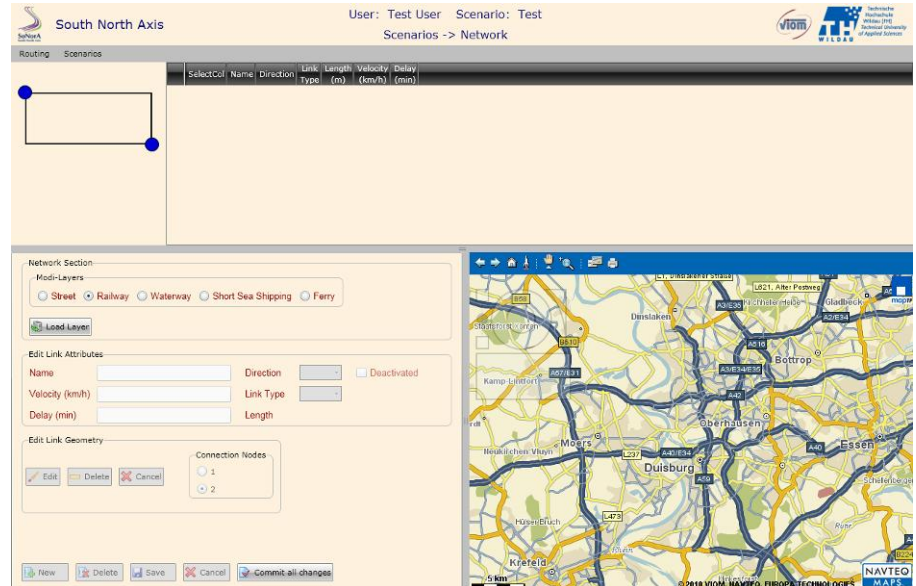
To select a network segment the respective network layer of the transport modus has to be loaded. To reduce computing times the required zoom level is dependent on the transport modus. As the street network has the highest density the zoom level has to be very high (please select a small area in the map). For railway, waterway as well as short sea shipping and ferry the zoom level is descending.

Zoom with the map toolbar to the region in the map where the wished network segment is located.

Select the transport mode.

If the button “load layer” is enabled the zoom level is sufficient, if the button is disabled you have to zoom more into the map. Press the button “load layer” to load the network.

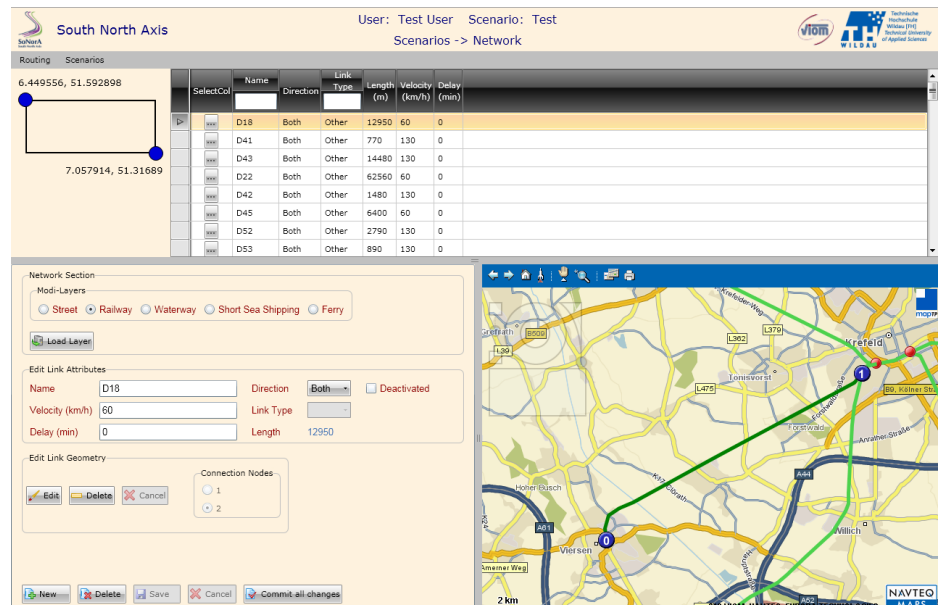
The network is shown in the map and all segments listed in the table.



To select a network segment you have two options:

1.: Select network segment in the table and press the button in the column “select col”.

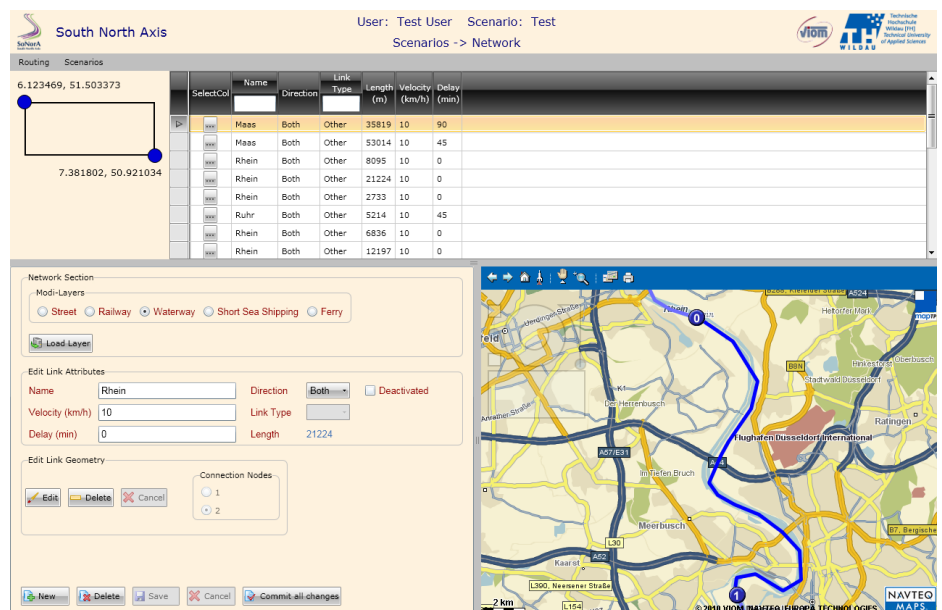
2.: Select network segment in the map by click on a segment. The selected network segment turns darker and the end points of the segment are marked with blue buttons with the numbers “0” and “1” in the map.



SelectCol	Name	Direction	Link Type	Length (m)	Velocity (km/h)	Delay (min)
<input checked="" type="checkbox"/>	D18	Both	Other	12950	60	0
<input type="checkbox"/>	D41	Both	Other	770	130	0
<input type="checkbox"/>	D43	Both	Other	14480	130	0
<input type="checkbox"/>	D22	Both	Other	62560	60	0
<input type="checkbox"/>	D42	Both	Other	1480	130	0
<input type="checkbox"/>	D45	Both	Other	6400	60	0
<input type="checkbox"/>	D52	Both	Other	2790	130	0
<input type="checkbox"/>	D53	Both	Other	890	130	0

## 5.3.2 Edit network segment

Select a network segment as above described.



SelectCol	Name	Direction	Link Type	Length (m)	Velocity (km/h)	Delay (min)
<input checked="" type="checkbox"/>	Maas	Both	Other	35819	10	90
<input type="checkbox"/>	Maas	Both	Other	53014	10	45
<input type="checkbox"/>	Rhein	Both	Other	8095	10	0
<input type="checkbox"/>	Rhein	Both	Other	21224	10	0
<input type="checkbox"/>	Rhein	Both	Other	2733	10	0
<input type="checkbox"/>	Ruhr	Both	Other	5214	10	45
<input type="checkbox"/>	Rhein	Both	Other	6836	10	0
<input type="checkbox"/>	Rhein	Both	Other	12197	10	0

You can edit the following segment attributes (having impact on the routing and accessibility analysis, e. g. faster network segments will be preferred):

- name
- velocity
- delay (e. g. because of locks, etc.)
- direction
- link type (only mode street)

Furthermore you can edit the segment geometry in the map affecting the length of the segments and therewith duration, costs and energy consumption.

You have two options:

1.: Edit the existing segment geometry:

Press the button “edit”.

The network segment gets divided in several small segments in the map.

Edit Link Attributes

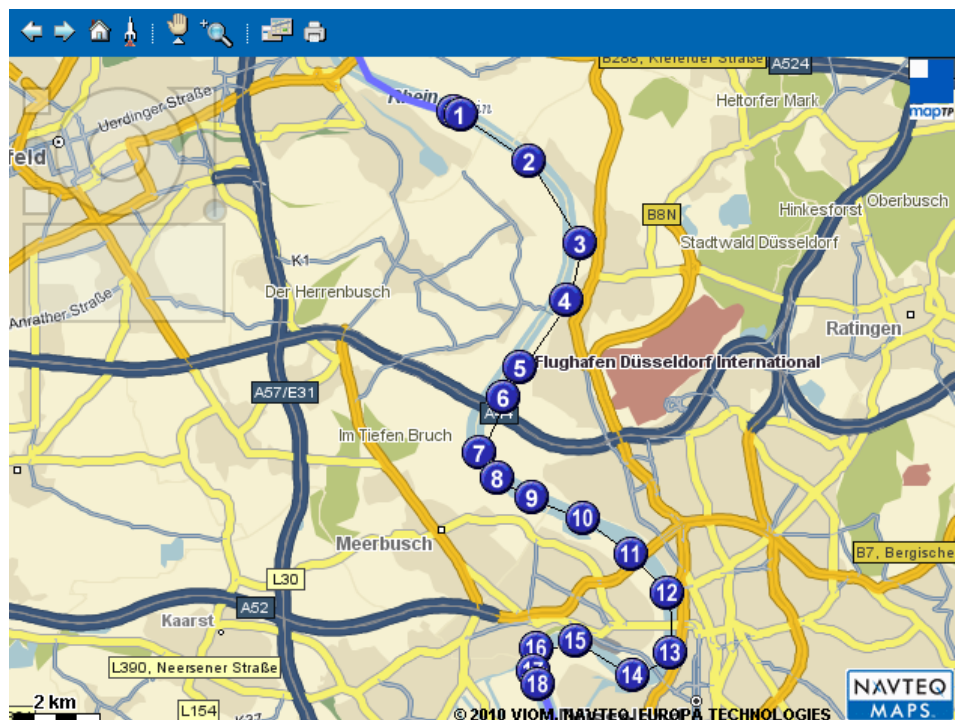
Name	<input type="text" value="Rhein"/>	Direction	<input type="text" value="Both"/>	<input type="checkbox"/> Deactivated
Velocity (km/h)	<input type="text" value="10"/>	Link Type	<input type="text" value=""/>	
Delay (min)	<input type="text" value="0"/>	Length	21224	

Edit Link Geometry

Edit
Delete
Cancel

Connection Nodes

☐ 1
☒ 2

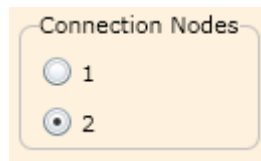


2.: Delete the existing segment geometry and built up a new geometry.

Press the button “delete”.



At first you have to link the network segment to existing network segments. Determine whether the network segment will be linked at both ends or only at one end with the existing network segments. Make a tick.



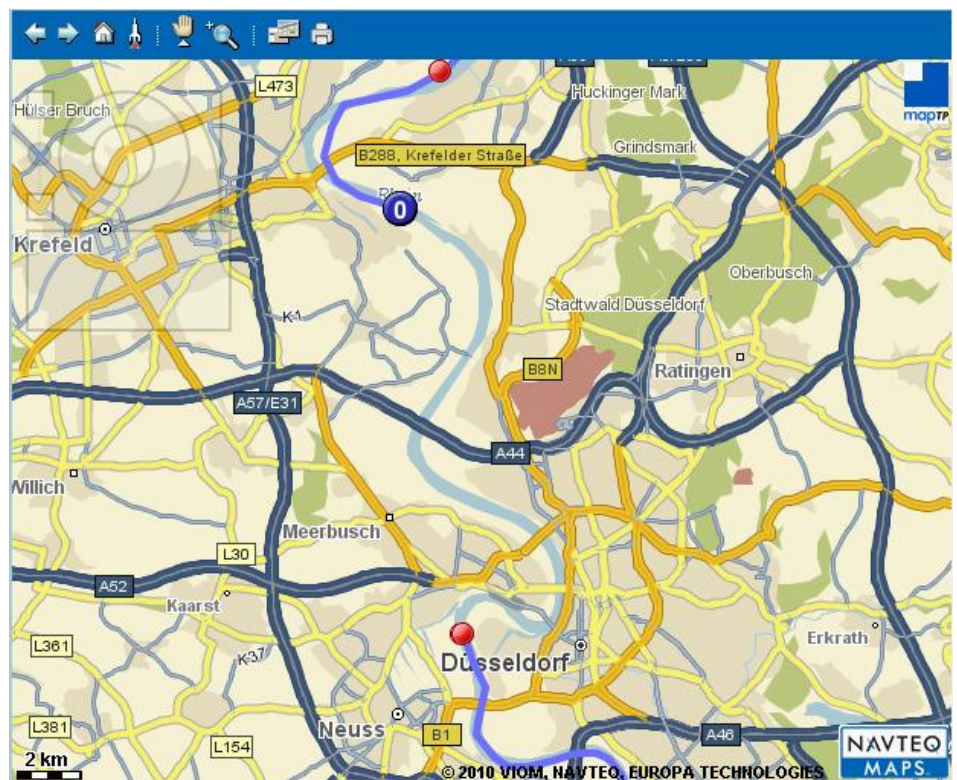
To build up the network geometry press the button “edit”.



You have to link the new geometry of the network segment to existing network segments. Therefore press the shift key and click in the map on the wished network segment end point (red bubble). The red bubble turns into a blue button with numbers.

If you selected one connection node: a second blue button with numbers appears automatically, which you can move.

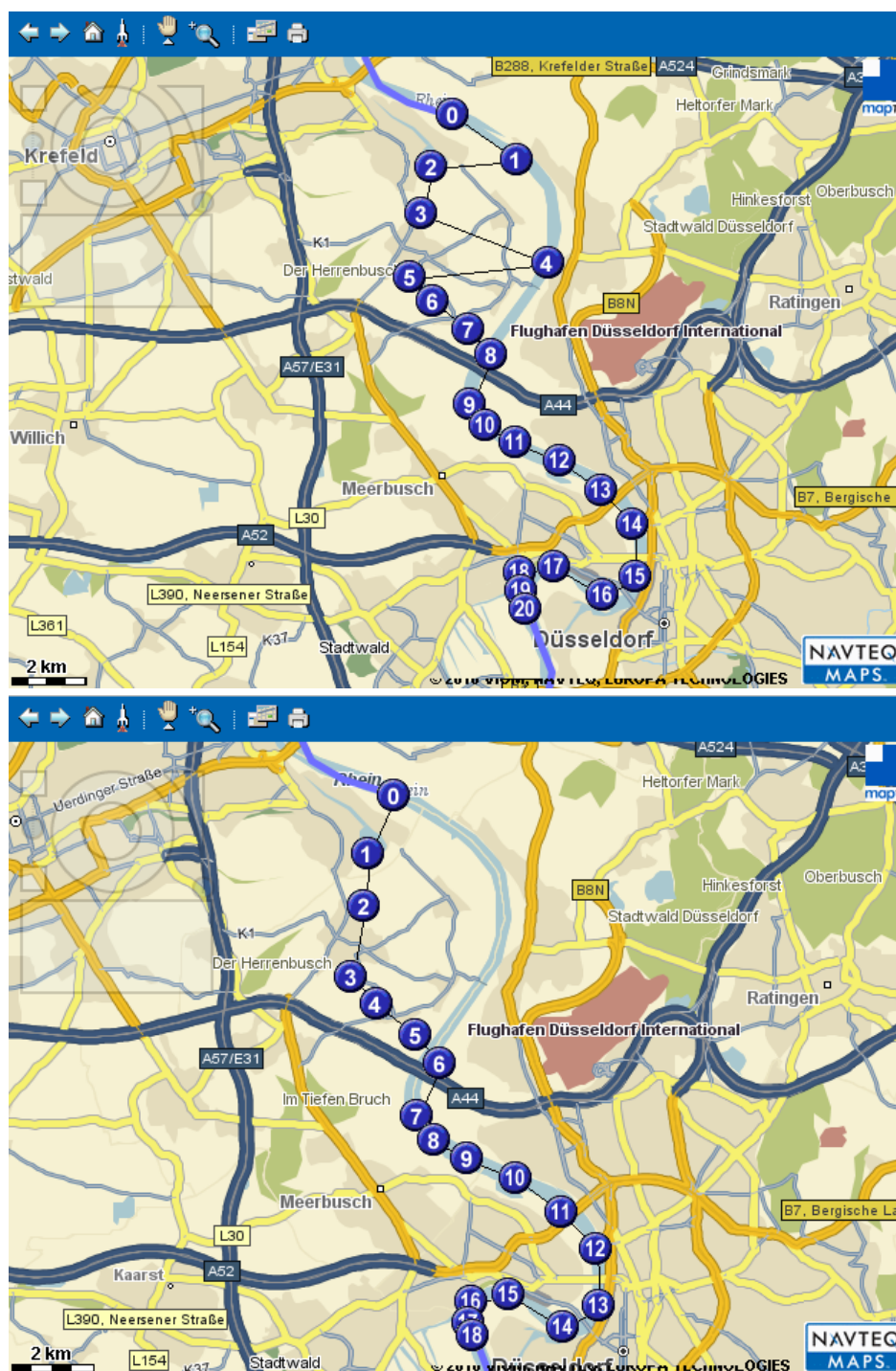
If you selected two connection nodes: repeat this procedure for the second connection node. A direct line connects both connection nodes.



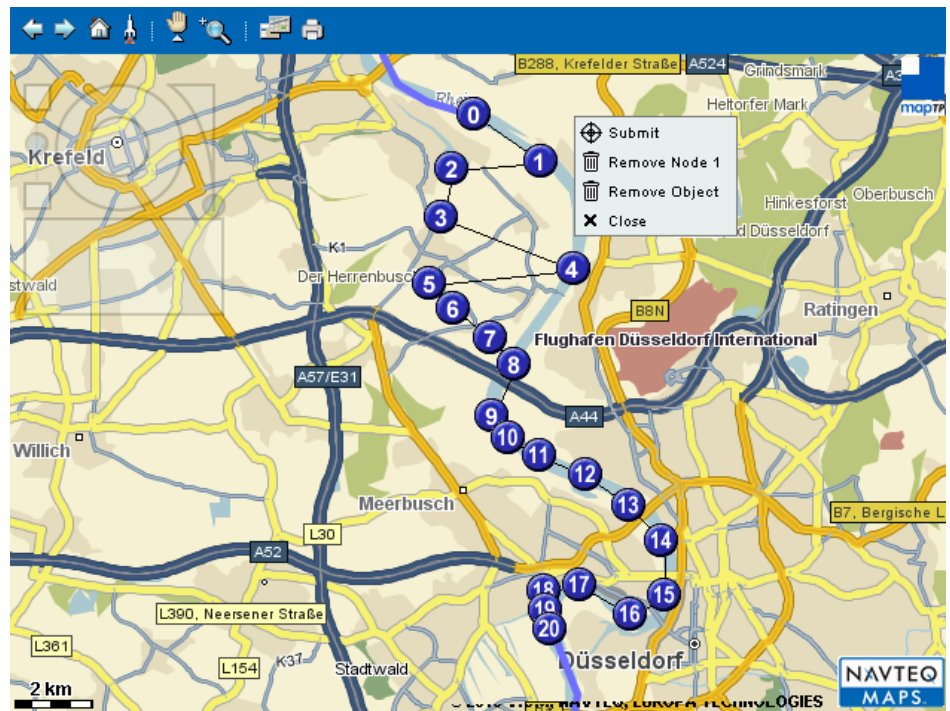
For both options:

You can insert new blue buttons with numbers as pivot point by pressing the shift key and clicking on the connection between two blue buttons with numbers where you want to insert the new blue button with numbers.

By pressing the shift key you can drag and drop the blue buttons with numbers. This changes the segment geometry.



To delete a blue button with numbers press the shift key and click on the blue button with numbers with the right mouse button. Press the button “remove node” in the context menu.

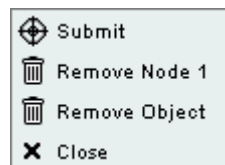


If you want to cancel all the segment geometry changes made in the map, press the button “cancel”.

Press the button “close” to close the context menu.

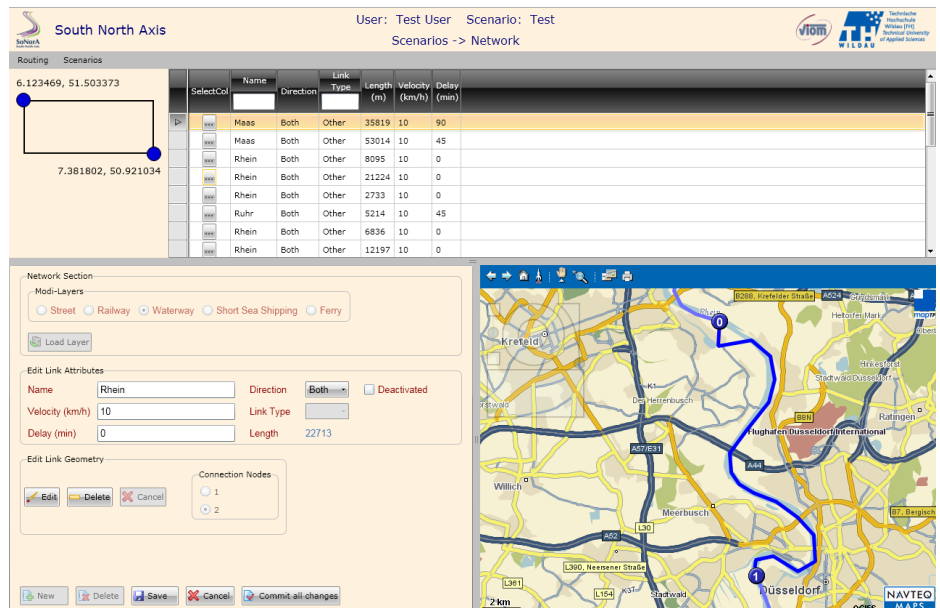
Press the button “remove object” of the context menu to remove the whole network geometry.

When you have finished with editing the segment geometry press the button “submit” of the context menu.





The segment geometry will be saved, put together to one segment and length of this segment is calculated and displayed.



The screenshot shows the 'South North Axis' software interface. At the top, it displays 'User: Test User' and 'Scenario: Test'. Below this, there's a 'Routing' section with a network diagram showing a path between two points. To the right is a table of network segments:

Select	Name	Direction	Link Type	Length (m)	Velocity (km/h)	Delay (min)
<input type="checkbox"/>	Maas	Both	Other	35819	10	90
<input type="checkbox"/>	Maas	Both	Other	53014	10	45
<input type="checkbox"/>	Rhein	Both	Other	8095	10	0
<input type="checkbox"/>	Rhein	Both	Other	21224	10	0
<input type="checkbox"/>	Rhein	Both	Other	2733	10	0
<input type="checkbox"/>	Ruhr	Both	Other	5214	10	45
<input type="checkbox"/>	Rhein	Both	Other	6836	10	0
<input type="checkbox"/>	Rhein	Both	Other	12197	10	0

Below the table, there's a 'Network Section' with 'Modi-Layers' (Street, Railway, Waterway, Short Sea Shipping, Ferry) and a 'Load Layer' button. The 'Edit Link Attributes' section includes fields for Name (Rhein), Direction (Both), Velocity (km/h) (10), Delay (min) (0), Link Type, and Length (22713). The 'Edit Link Geometry' section has buttons for Edit, Delete, and Cancel, and a 'Connection Nodes' section with radio buttons for 1 and 2. At the bottom, there are buttons for New, Delete, Save, Cancel, and Commit all changes. On the right, there's a map view showing the network segments overlaid on a geographical map.

To save all changes press the button “save”.

If you want to clear all changes made since the last save, press the button “cancel”.



### 5.3.3 Add new network segment

New network segments will be included in the transport network and will be used for the routing and accessibility analysis. To add a new network segment the respective network layer of the transport modus has to be loaded. Load the layer of the respective network as above described.

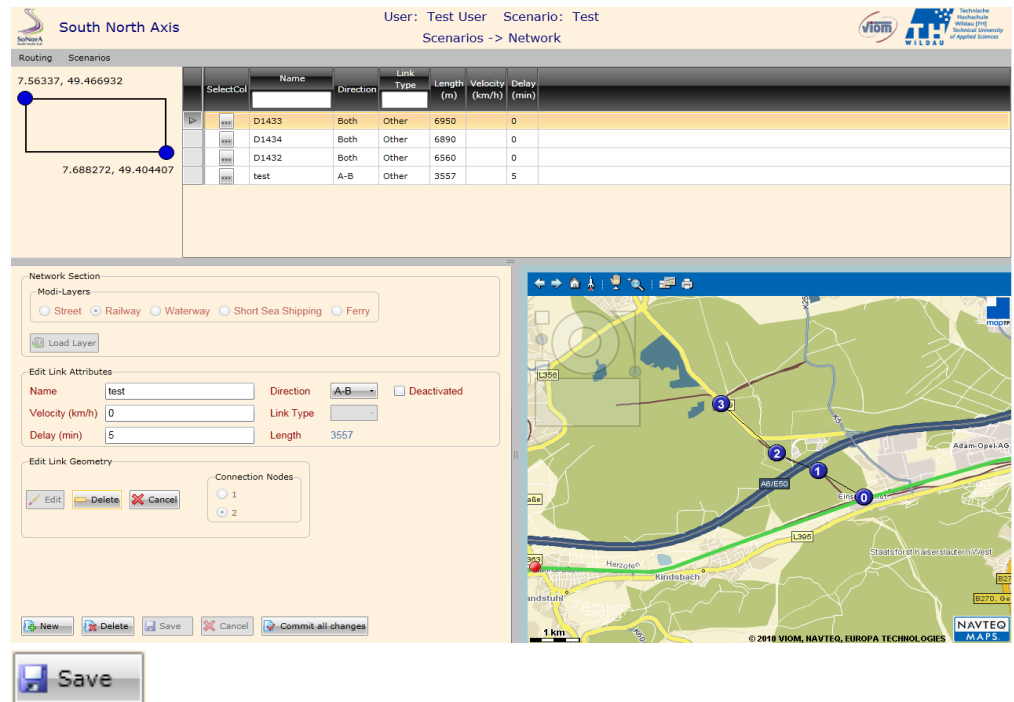
Press the button “new”.



You can information and parameters like above described:

- name
- velocity
- delay
- direction
- link type (only mode street)

And edit the link geometry as above described.



The screenshot shows the 'South North Axis' software interface. At the top, it displays 'User: Test User' and 'Scenario: Test'. Below this, there's a 'Routing' tab and a 'Scenarios' tab. A table lists network links with columns: SelectCol, Name, Direction, Link Type, Length (m), Velocity (km/h), and Delay (min). The table contains four rows: D1433, D1434, D1432, and a 'test' link. The 'test' link has a direction of 'A-B', a link type of 'Other', a length of 3557, a velocity of 0, and a delay of 5. Below the table, there's a 'Network Section' with 'Modi-Layers' (Street, Railway, Waterway, Short Sea Shipping, Ferry) and a 'Load Layer' button. The 'Edit Link Attributes' section shows fields for Name (test), Direction (A-B), Velocity (km/h) (0), Delay (min) (5), Link Type, and Length (3557). There's also a 'Deactivated' checkbox. The 'Edit Link Geometry' section has 'Edit', 'Delete', and 'Cancel' buttons, and a 'Connection Nodes' section with radio buttons for 1 and 2. At the bottom, there's a 'Save' button and a 'Commit all changes' button. On the right, a map shows the network layout with nodes and links overlaid on a geographical map.

To save the new network segment press the button “save”.

### 5.3.4 Delete network segment

Deleted network segments are not available for the routing and accessibility analysis.

Select a network segment as above described.

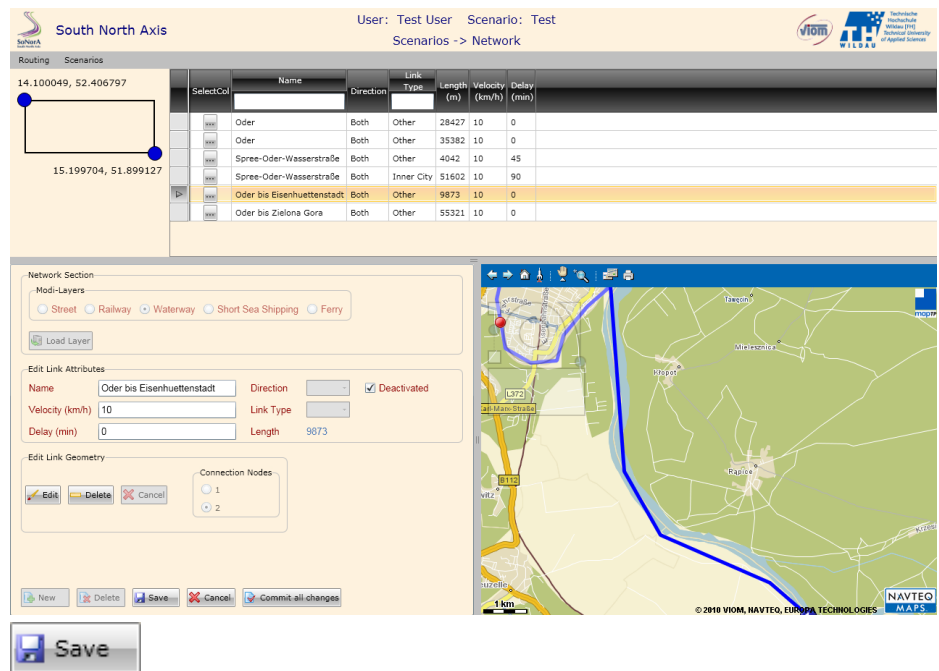
Press the button “delete”.



### 5.3.5 Disable network segment

If you want to disable a network segment for the routing process but not delete it finally, you have to select a network segment as above described firstly. A disabled network segment will not be considered in the routing, accessibility analyses and comparison of scenario. The advantage of the “disable” function is that the user can easily reactivate the network segment later.

To disable the network segment you have to tick “deactivated”.



SelectCol	Name	Direction	Link Type	Length (m)	Velocity (km/h)	Delay (min)
	Oder	Both	Other	28427	10	0
	Oder	Both	Other	35382	10	0
	Spree-Oder-Wasserstraße	Both	Other	4042	10	45
	Spree-Oder-Wasserstraße	Both	Inner City	51602	10	90
	Oder bis Eisenhuettenstadt	Both	Other	9873	10	0
	Oder bis Zielona Gora	Both	Other	55321	10	0

Network Section

Modi-Layers: ☐ Street ☐ Railway ☐ Waterway ☐ Short Sea Shipping ☐ Ferry

Load Layer

Edit Link Attributes

Name:  Direction:  ☒ Deactivated

Velocity (km/h):  Link Type:

Delay (min):  Length:

Edit Link Geometry

Connection Nodes:

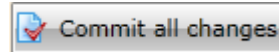
Buttons: New, Delete, Save, Cancel, Commit all changes

Save

Press the button “save”.

## 5.4 Commit all changes

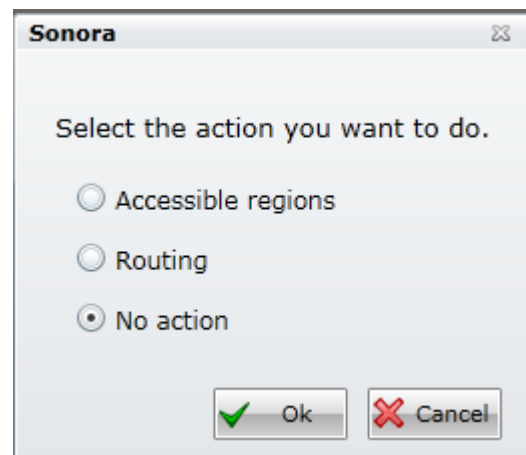
To commit and integrate the changes into the routing network you have to press the button “commit all changes” (on the bottom of every page in the menu item “scenarios”).



NOTE: As millions of network segments are updated by this button it takes some time and you should press it just at the end.

NOTE: Without updating the routing network by “commit all changes” nobody could route in this scenario. Users who want to do a routing or accessibility analysis on the scenario get the message “the network is out of date”.

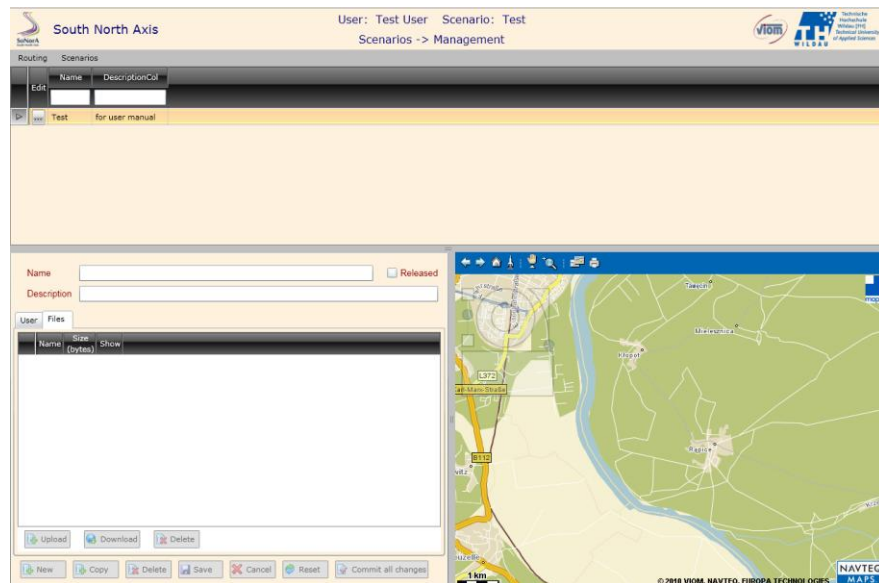
When the routing network is updated you are asked if you want to do a routing or accessibility analysis.



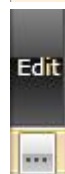
## 6 Sharing the results of a scenario with other users – available for scenario administrators

Within the scenario management site the scenario administrator can manage files describing the scenario as well as the users who can use your scenario.

Select the submenu item “management”. On the following page you can upload and delete files and manage the users assigned to the scenario.



To select the respective scenario press the button in the column “edit”.

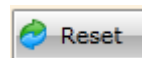


You can change the name of the scenario and insert a description. “released” button: if it is ticked the scenario is published and the assigned users can work on it, if the button is not ticked the scenario is hidden, also for the assigned users.

Name  ☒ Released

Description

With the button “reset” you put in the whole scenario back into the default settings, all changes ever made in the scenario are canceled!



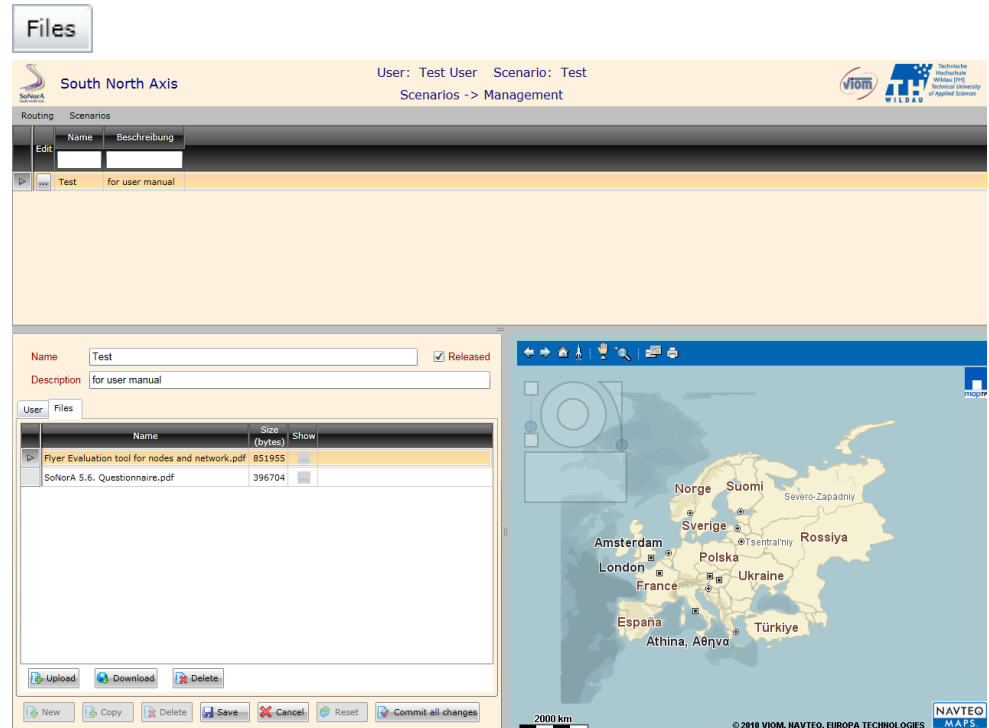
NOTE: You cannot reactivate the made changes!

## 6.1 Storage of files describing the scenario

Files concerning the scenario (e. g. description, idea) can be uploaded and deleted.

Press the button “files”. All already published files are listed.

To select a file click on the respective line



To view the already uploaded files press the button in the column “show”.

Furthermore you can download the files. Therefore press the button “download” and the selected file will be downloaded onto your computer. Give the file a name and select a location.

To delete a file press the button “delete”.

To upload a new file press the button “upload” and select a file from your computer.

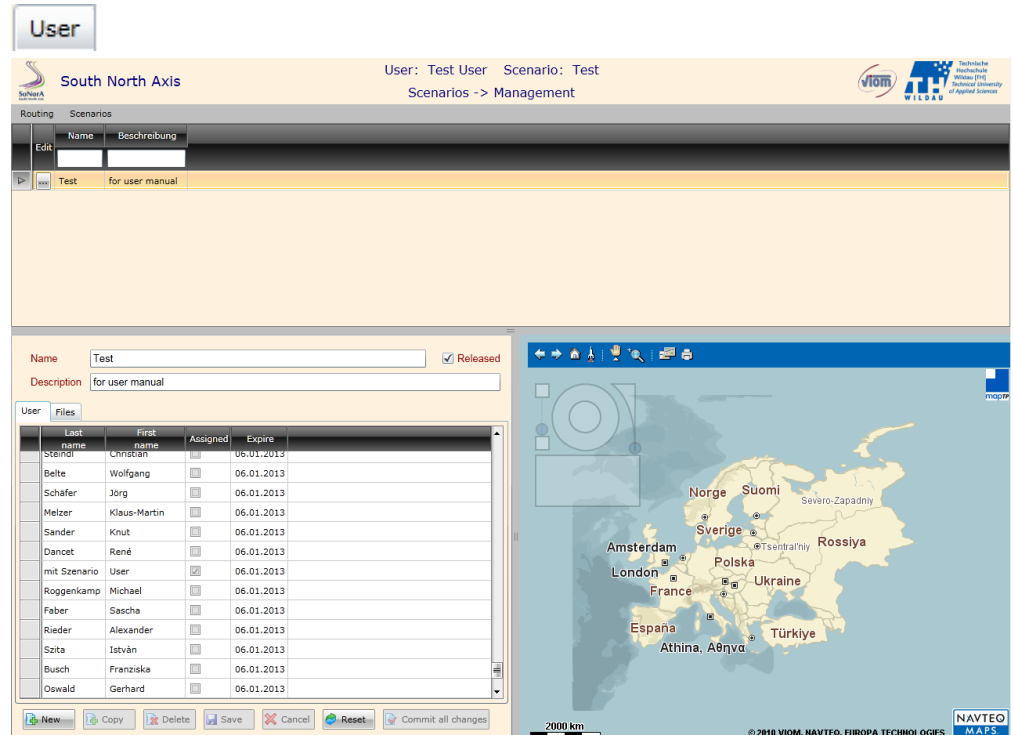
**NOTE:** only pdf-files can be uploaded.





## 6.2 Invitation of users to share the scenario

Press the button “user”.  
All users of the whole  
tool are listed.

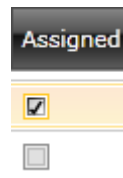


User	Last name	First name	Assigned	Expire
Steindl	Christian		<input type="checkbox"/>	06.01.2013
Beike	Wolfgang		<input type="checkbox"/>	06.01.2013
Schäfer	Jörg		<input type="checkbox"/>	06.01.2013
Melzer	Klaus-Martin		<input type="checkbox"/>	06.01.2013
Sander	Knut		<input type="checkbox"/>	06.01.2013
Dancet	René		<input type="checkbox"/>	06.01.2013
mit Szenario	User		<input checked="" type="checkbox"/>	06.01.2013
Roggenkamp	Michael		<input type="checkbox"/>	06.01.2013
Faber	Sascha		<input type="checkbox"/>	06.01.2013
Rieder	Alexander		<input type="checkbox"/>	06.01.2013
Szita	István		<input type="checkbox"/>	06.01.2013
Busch	Franziska		<input type="checkbox"/>	06.01.2013
Oswald	Gerhard		<input type="checkbox"/>	06.01.2013

You can assign users to  
the scenario by selecting  
the user and ticking the  
box in the column  
“assigned”. By the same  
procedure you can nullify  
the assignment users to  
the scenario.

Save the changes by  
pressing the button  
“save”.

Cancel the made changes  
by pressing the button  
“cancel”.





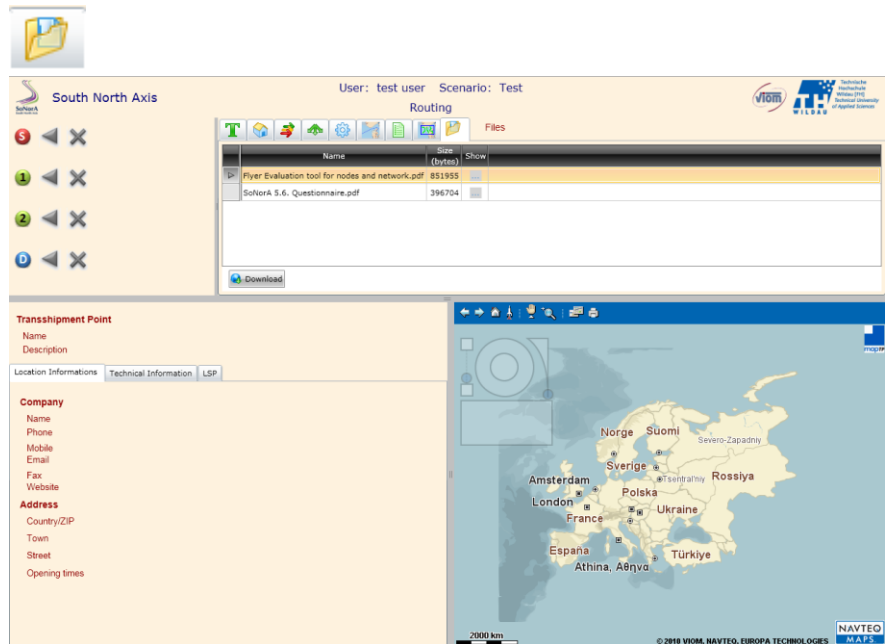
## 6.3 Rights of the invited users

### 6.3.1 Reading files describing the scenario

For a scenario or the default documents (e. g. description, idea) may be available. The invited user has the possibility to view and downloads these files.

Click on the button “files”.

On the following page all available documents are listed.



You can open the document in a new tab of your browser with the link in the “show” column.

Press the “download” button in order to download the selected document and save it locally.



### 6.3.2 Making own Routing and accessibility analyses with the values of the scenario

See chapter 4.1 Intermodal routing, chapter 0 Analysis of accessibility, chapter 7.1 Transit routing and chapter 0 Comparative accessibility analysis.

## 7 Comparison of scenarios – available for scenario administrators and invited users

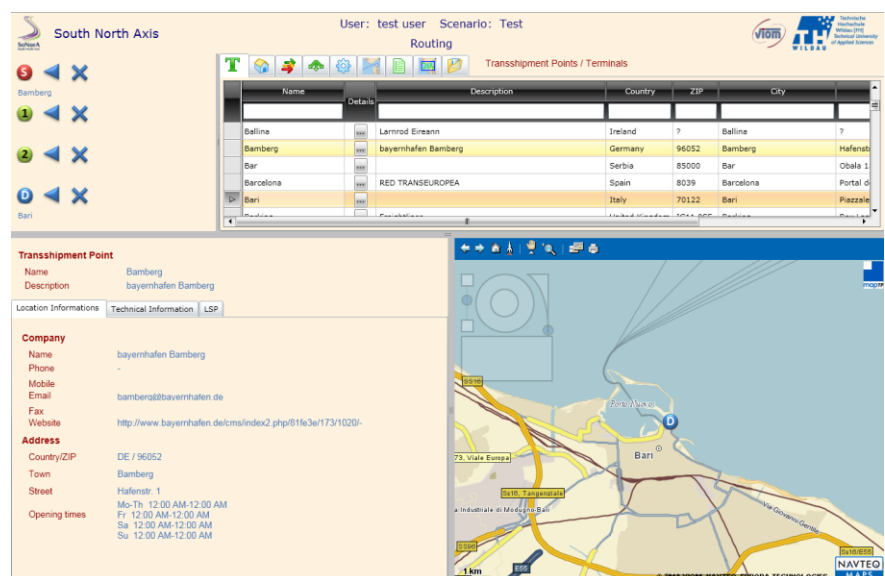
For the evaluation of a scenario and the changes made within a scenario it can be automatically compared with the default with two means: transit routing and accessibility analysis. Previously defined routes and accessibility analyses will be calculated on the scenario and the default.

**NOTE:** this comparison function is not available within the scenario “default” because it makes no sense to compare “default” with “default”.

## 7.1 Transit routing

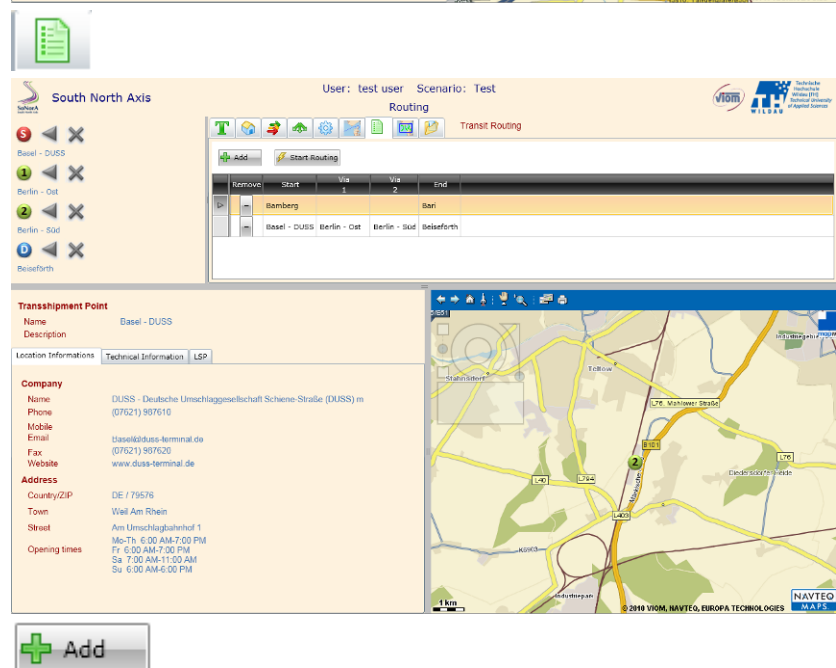
Transit routing is a comparison function to evaluate the impact of the changes made in the scenario for the routing and routing result. Previously defined routes will be calculated on the scenario and the default. Results are shown as map and list, showing differences in routing path and parameters of the routing results.

At first routes have to be defined that will be calculated afterwards. To get a reasonable result of the transit routing the user has to determine routes which will be affected by the changes made in the scenario. Determine start and destination (either terminals and / or free address) and optionally up to two via points (terminals) as described before.



Press the “transit routing” button.

On the following page you can add and remove defined routes and start the transit routings.



To add the defined route (start, destination and via points) press the “add” button.

With the link in the column “remove” a defined route can be removed from the list.

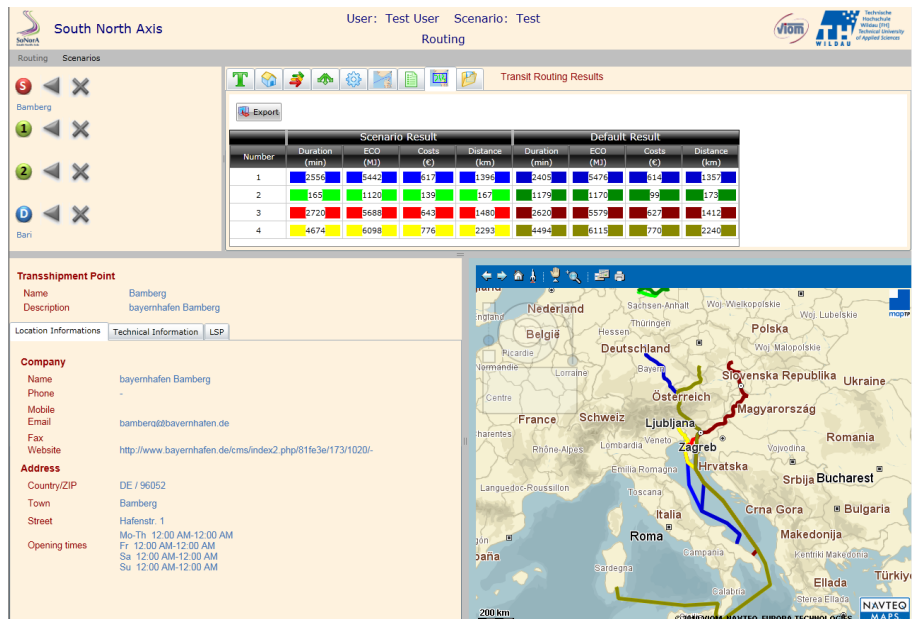


Press the “start routing” button to start the routing process. The routing will be calculated according to the appointed optimisation mode on the routing page.



The next page shows the result of the transit routing.

In the table the results of the defined routes for the scenario and the default are listed: duration, energy consumption (eco), costs and distance. The map shows the different routes.



The screenshot displays the 'Transit Routing Results' interface. On the left, a sidebar shows a list of routes (Bamberg, 1, 2, D, Bari) with expand/collapse icons. The main area features a table comparing 'Scenario Result' and 'Default Result' for four routes. The table columns are: Number, Duration (min), ECO (MJ), Costs (€), and Distance (km). The map on the right shows the geographical routes between Bamberg and Bari, with various European countries labeled.

Scenario Result					Default Result				
Number	Duration (min)	ECO (MJ)	Costs (€)	Distance (km)	Number	Duration (min)	ECO (MJ)	Costs (€)	Distance (km)
1	2556	5442	617	1396	2	2405	5476	614	1357
2	165	1120	139	167	3	1179	1170	99	175
3	2720	5688	643	1480	4	2620	5576	627	1412
4	4674	6098	776	2293	5	4494	6115	770	2240

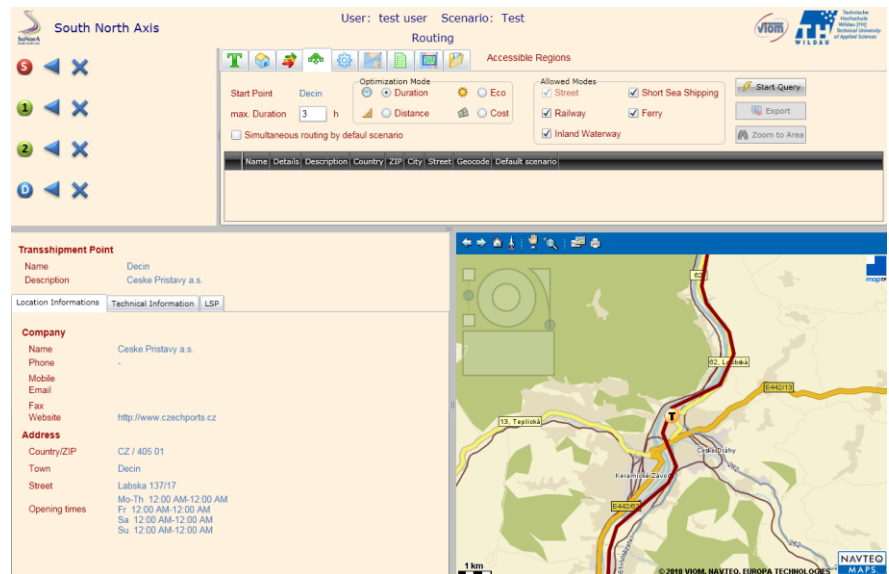
With the “export” button the results listed in the table can be saved as a .csv file.



## 7.2 Comparative accessibility analysis

The previously described accessibility analysis of terminals can be calculated simultaneously by the scenario and the default for the comparison and evaluation of both.

Select a start point, optimisation mode, maximum value and allowed modes as previously described for accessibility analysis.



You have to tick the field  
“simultaneous routing by default  
scenario”.

Press the “start query” button.

The next page lists the results of the  
accessibility analyses.

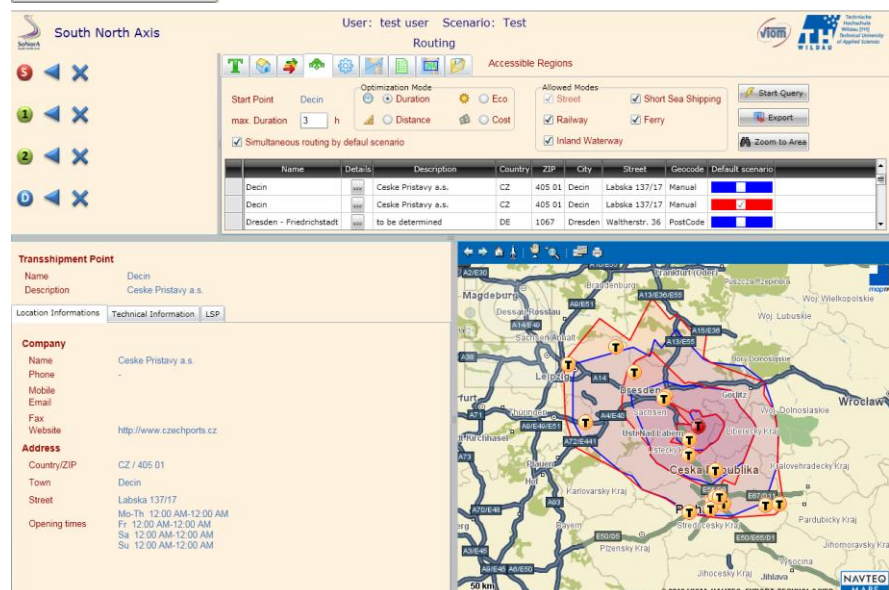
In the table all terminals reachable  
in the requested value are listed  
ordered by name. The tick in the last  
column indicates the colour of the  
default.



The map pictures the results as  
isochrones in two colours (legend  
within the last column of the table).

In the example shown the changes  
in the scenario led to a decreased  
accessibility compared with the  
default.

☒ Simultaneous routing by default scenario





Name	Description	Country	ZIP	City	Street	Geocode	Default scenario
Decin	Ceske Pristavy a.s.	CZ	405 01	Decin	Labiska 137/17	Manual	
Decin	Ceske Pristavy a.s.	CZ	405 01	Decin	Labiska 137/17	Manual	
Dresden - Friedrichstadt	to be determined	DE	1067	Dresden	Waltherstr. 36	PostCode	